AUTHOR INDEX

A

Aach, H. G., 173 Abbot, D. L., 7, 8 Abbott, W., 288 Abe, M., 423, 432 Aberg, K. A., see Aschan-Aberg, K. Ackermann, W. W., 258 Adams, A. F. R., 307 Adelberg, E. A., 53 Adler, E., 185, 188, 189 Agarwala, S. C., 321 Agiya, A. H., 36 Ahrne, I., 66, 80 Ajl, S., 355, 362, 363, 364 Akai, S., 433 Akazawa, T., 123, 128, 129, 133, 135, 137 Aksenova, V. A., 135 Albaum, H. G., 130 Alben, A. O., 6 Albersheim, P., 94 Albertsson, P. A., 42 Alcorn, S. M., 263, 266 Alderman, D., 177 Aleksandrova, I. V., 302 Alexander, D. M., 307, 309 Alivisatos, S. G. A., 130 Allard, H. A., 9 Allen, F. W., 7 Allen, M. B., 59, 64, 66, 128, 131, 132, 293 Allen, O. N., 270, 311 Allen, P. J., 405 Allison, F. E., 310 Allison, P., 259 Allison, R. D., 3, 6 Almoslechner, E., 410 Altermatt, H. A., 342, 354 Alvarez-De Choudens, J. A., 423, 424 Amling, H. J., 23, 298 Amphlett, C. B., 89, 92 Anagnostopoulos, C., 131 Anderson, E. P., 351 Anderson, H. W., 266 Anderson, H. W., 250 Anderson, I. C., 55, 58, 59, 60, 62, 64, 65 Anderson, K. J. I., 80 Anderson, L., 124, 208 Anderson, N. G., 35 Anderson, W. P., 167, 260, 268 Anderssen, F. G., 3 Ando, H., 225 Andrejew, A., 117, 128, 129 Andrews, E. A., 330

Anfinsen, C. B., 60 Angel, C. R., 412 Angell, H. R., 272 Angueloff, N., 423, 424, 428 Anker, L., 432 Anthony, D. S., 361 Antonova, G. V., 320 Appleman, W., 134 Appleman, W. E., 10, 116, 117, 119, 128 Applemans, F., 136 Applewhite, T. H., 135 Arillaga, J. G., see Guiscafre-Arillaga, J. Arisz, W. H., 16, 19, 20, 100, 108 Ark, P. A., 258, 263, 266 Armson, K. A., 225 Army, T. J., 322 Arnold, W., 77 Arnon, D. I., 46, 59, 64, 66, 128, 131, 132, 293, 331,335 Arreguin-Lozano, B., 330 Arrigoni, O., 123, 135 Arzolla, J. P., 6, 21 Asakawa, A., 232 Aschan-Aberg, K., 427 Asen, S., 17 Ashton, F. M., 18, 23 Ashwell, G., 341, 343, 346, 347 Asprey, G. F., 97, 101 Atkinson, D. E., 314, 316 Attoe, O. J., 311 Audus, L. J., 135 Aulin-Erdtman, G., 193 Avron, M., 10, 40, 59, 61, 64, 65, 117 Avundzhyan, E. C., 48 Axelrod, B., 114, 128, 129, 234, 329, 334, 341, 355 Ayland, M. J., 89, 91, 97 Ayres, A. S., 304, 309 Azarkh, R. M., 316

E

Baas-Becking, L. G. M., 75
Bach, M. K., 316
Bachrach, U., 364
Badami, R. S., 249
Bagatell, F. K., 345
Bailey, J. H., 264
Bain, J. A., 432
Bakern, K., 322
Baker, E., 14, 26

Baker, R. S., 234, 442, 443, 444, 445 Bakhuis, J. A., 321 Balashev, L. L., 30 Balazs, O., 114 Baldacci, E., 418 Ball, C. D., 189 Ball, E., 390 Ball, E. G., 60, 119 Ballou, C. E., 333 Ballou, F. H., 2 Balls, A. K., 217 Baltscheffsky, M., 58, 59 60, 61, 63, 65 Bamann, E., 198 Banbury, G. H., 423, 451, 452 Bancroft, F. W., 453 Bancroft, J. B., 247 Bandurski, R. S., 118, 128, 129, 130, 133, 234, 334, 442 Bange, G. G. J., 92, 93, 95, 104 Barber, D. A., 333 Barber, G. A., 202, 207, 212 Barber, H. N., 175 Barber, R. S., 38 Barbesino, M., 134 Bard, R. C., 336, 339 Barker, C., 210 Barker, H. A., 216 Barker, J., 116 Barnette, R. M., 3, Barnwell, J. L., 368 Baron, F. J., 233 Barratt, R. W., 423, 425 Barrier, G. E., 13, 15, 17, 19, 20, 21, 22 Barron, E. S. G., 202, 216, 339 Barrows, H. L., 318 Barry, J. M., 359 Bartholomew, W. V., 301, 306 Barton-Wright, E., 251 Bassham, J. A., 77, 131, 360 Bastin, R., 406, 409, 412 Bathurst, A. C., 3 Batjer, L. P., 5, 7 Bauch, R., 424 Bauer, L., 396 Baum, R. R., 37 Bautz, E., 136 Bawden, F. C., 239-56; 36, 42, 43, 44, 47, 48, 239, 240, 241, 242, 243, 244, 245, 246, 247, 248,

249, 251, 252, 258

Bayley, S. T., 135 Bazire, G. C., see Cohen-Bazire, G. Bean, R. C., 348, 358 Beardsley, J., 423, 424 Beauchesne, G., 394 Beaudreau, G. S., 116, 117 Becherer, G., 193 Beck, W. S., 206, 207 Becker, T., 159 Becking, J. H., 306 Becking, L. G. M. B., see Baas-Becking, L. G. M. Beckman, C. H., 408 Beerman, H., 423, 428 Beevers, H., 114, 115, 117, 118, 124, 128, 129, 133, 134, 137, 202, 209, 214, 215, 216, 329, 330, 334, 337, 338, 341, 353, 354, 361, 362, 363, 364 Behnke-Rogers, J., 406 Behrens, G., 149 Beimler, R., 159, 397 Bein, M., 406, 409 Bekima, R. H., 42 Benda, G. T. A., 248 Bendall, D. S., 121, 124, 125 Benitez, A., 66, 80 Benne, E. J., 16, 25, 281 Bennet-Clark, T. A., 381 Bennett, C. W., 248 Bennett, E., 193 Benson, A. A., 123, 131, 132, 219, 335, 360, 364, 369 Benson, N. R., 5 Bentley, J. A., 381, 393, 397, 398, 412 Bentley, R., 368 Berducou, J., 408, 418, 425 BerezovskiY, M. Y., 290 Berger, X., 78 Bergeron, J., 55 Bergeron, J. A., 55, 58, 62 Bergmann, L., 400 Bergquist, G., 135 Bergstrom, S., 197 Berman, B., 71, 75 Bernard-Dagan, C., 230 Berner, R. A., 318 Bernhauer, K., 364 Bernheim, F., 315 Bernlohr, R., 134 Bernstein, I. A., 344 Bershtein, B. I., 308 Betz, A., 114, 134 Bever, W. M., 422, 424, 428 Bevilacqua, L. R., see Riggio-Bevilacqua, L.

Bezinger, E. N., 47 Bhargava, K. S., 422 Bhattacharyya, R. S., 422 Bhattacharyya, P.K., 369 Bhatti, H. M., 307 Biale, J. B., 10, 116, 117, 119, 120, 121, 128, 129, 134, 135, 368 Bickle, S., 412 Bickluph, O., 13, 15, 16, 17, 18, 19, 20, 21, 22, 26, 296, 297 Biddulph, S., 16, 20, 296, 297 Bidwell, R. G. S., 114, 118, 131, 351, 399 Bienenfeld, W., 322 Bilinski, E., 318, 361 Billek, G., 186, 188 Bils, R. F., 128, 133 Bioletti, F. T., 3 Birch, A. J., 396 Bird, L. S., 432 Birk, Y., 126 Birt, L. M., 135, 303 Bishop, O. N., 101 Biswas, T. D., 302 Bitancourt, A. A., 398 Bjorkman, A., 191, 192 Björkman, E., 225, 226, 421 Black, A. L., 341 Black, L. M. 380, 388 Blakeslee, A. F., 390 Bland, D. E., 193 Blaney, L. T., 151, 170 Bloom, B., 336 Blue, W. G., 309 Blumenthal, H. J., 337, 352 Boatman, S. G., 199 Boatwright, G. O., 305 Boawn, L. C., 6, 7, 306 Bocchi, A., 156 Bogdanov, P. L., 226 Bogorad, L., 178 Bogorad, L., 178 Böhm, J., 13 Bokman, A. H., 204 Bolcato, V., 364 Bolhuis, G.G., 148, 282 Bollard, E. G., 321 Bond, G., 307 Bonga, J. M., 15, 20 Bongers, L. H. J., 312 Bonner, J., 43, 90, 93, 94, 95, 109, 128, 129, 135, 153, 159, 161, 202, 244, 283, 391, 407, 408, 415, 416, 421 Bonner, W. D., 118, 121, 122, 125, 126, 127 Bonnet, L., 3 Bonnichsen, R.K., 46 Bonsignore, A., 369 Booth, A., 26 Boquel, G., 303 Bormann, F. H., 230 Borthwick, H. A., 150,

154, 161, 228, 229 Borzini, G., 408 Bos, L., 178 Boser, H., 331 Boshart, R., 198 Boswell, F. C., 283 Boswell, J. G., 380, 397 Boudon, S., 233 Bouillenne, R., 423, 424, 428, 429 Bouillenne-Walrand, M. 410, 423, 424, 427, 428, 429 Bourdouil, C. S., see Sosa-Bourdouil, C. Bowler, E., 14, 26 Boyce, J. S., 225 Boyer, P. D., 59, 331, 359 Boynton, D., 3, 13, 14, 16, 21 Boysen-Jensen, P., 405, 409, 412, 415, 421, 448 Bradbeer, C., 197-222; 114, 118, 199, 214, 215, 216 Bradley, D. F., 132 Bradley, M. V., 8 Brailova, N. V., 272 Brasher, E. P., 25 Braude, R., 38 Braun, A. C., 261, 380, 388, 398, 420 Brauner, L., 132, 441, 448, 450, 451 Brauns, F. E., 185, 186 Braunshtein, A. D., 316 Bremner, J. M., 302, 303, 310, 311 Breslow, E., 118, 347 Brian, P. W., 257, 266, 267, 271, 405, 406, 412, 431 Brierly, J. K., 124 Briggs, G. E., 87, 88, 89, 91, 93, 94, 95, 96, 97, 98, 99, 100 Briggs, L. J., 3 Briggs, W. R., 447 Brin, C. P., 80 Brin, M., 339 Britton, B., 331 Britton, G., 393, 398 Broadbent, F. E., 303, 309 Brodie, H. W., 15, 18, 23 Brooks, R. M., 8 Brouwer, R., 108, 109 Brown, A. H., 57, 131 Brown, C. L., 231 Brown, D. H., 352 Brown, G. B., 344 Brown, J. M. A., 118 Brown, J. W., 282 Brown, R., 134 Brown, S. A., 189, 357 Brownell, L. E., 136 Brownell, P. F., 293

Broyer, T. C., 277-300; 16, 20, 87, 90, 91, 93, 95, 98, 101, 106, 108 Brubacher, G. B., 341 Brummond, D. O., 116 Bruns, F., 331 Bryant, M., 37 Bublitz, C., 345 Buchner, A., 25 Buder, J., 451, 452, 453 Buhler, D. R., 115 Bukovac, M. J., 16, 18, 19, 20, 25, 135, 166, 167, 297 Buler, H. von, 71, 75 Bullen, E. R., 303 Bünning, E., 150, 154, 169, 170, 171, 172, 423, 441, 445, 446, 448, 449, 450, 453, 454 Bünsow, R., 151, 160, 166, 167, 168, 171 Bunting, A. H., Burg, S. P., 135 Burleson, C. A., 304 Burma, D. P., 308, 343, 358 Burns, G. R., 230 Burns, J. J., 345, 346 Burr, G. O., 15, 18, 23, 189, 296 Burrell, R. C., 316 Burris, R. H., 301-28; 65, 115, 116, 124, 216, 233, 308, 311, 360, 364 Burroughs, L. F., 319 Burström, H., 108, 284, Butler, G. W., 88, 90, 94, 96, 97, 102, 108 Butt, W. D., 309 Butterfasz, T., 73 Butterworth, E. M., 341 Buy, H. G. du, 35 Byerrum, R. U., 189, 364

C

Cabib, E., 358
Cain, J. C., 3, 17, 18, 21, 305
Cain, R. B., 303
Cajlahjan, M. H., 162, 173
Calabrese, A. M., 198
Calder, E. A., 309
Calo, N., 107, 127
Calvert, A., 176
Calvin, J., 431
Calvin, M., 73, 77, 131, 132, 335, 360, 369
Camefort, H., 231
Campagne, R. N. van L., see Lookeren Campagne, R. N. van
Campbell, J. J. R., 362
Candela, M. I., 48, 313,

314 Capindale, J. B., 64, 334 Caplin, S. M., 382, 384, 385, 388, 389, 390, 393, Cardini, C. E., 352, 353, 358 Carlile, M. J., 451, 452 Carlson, R. M., 89, 91, 107 Carmona-Gomez, J., 260 Carpenter, W., 215, 362, 363 Carr, D. J., 152, 156, 157, 162, 169, 170 Carroll, E., 344 Carson, S. F., 361 Carter, J. F., 304 Castelfranco, P., 204 Casterman, C., 242 Castle, E. S., 450 Castro-Mendoza, H., 207 Cathey, H. M., 150, 154, 161, 319 Cavallito, C. J., 264 Ceruti, A., 34, 136 Chaikoff, I. L., 35, 217 Chailakhian, M. Kh., 227 Chamberlain, C. J., 387 Champigny, M. L., 302, 308 Chance, B., 41, 60, 61, 63, 65, 101, 106, 118, 120, 121, 122, 124, 125, 126, 129 Chandler, R. F., Jr., 225 Chandler, W. H., 1-12; 4, 5, 6 Chapman, H. D., 291 Chapman, R. A., 257, 259, 260. 262 Chardard, R., 73, 136 Chase, M., 240 Chasson, R. M., 90 Chastain, J. A., 89, 91, 107 Cheldelin, V. H., 114, 339, 351 Chen, Y. T., 348 Cheney, H. B., 295 Cheniae, G. M., 133, 313 Cheo, C. C., 244 Cheo, P. C., 245, 247 Chessin, M., 252 Chiang, C. 344 Chiba, Y., 40 Chidester, J. L., Ching, T. M., 130 242 Chiribago, J., 358 Chmelir, I. S., 5 Cholodny, N., 446 Chouard, P., 148, 165, 166, 167, 173 Choudens, J. A. A. De, see Alvarez-De Choudens, J. A.

Choudhri, R. S., 25 Chow, C. T., 10, 120, 121 Chowdhury, H. P., 427 Christensen, B. E., 115, 216 Christensen, J. J., 432 Christman, J. F., 330 Ciferri, R., 257 Ciotti, M., 119 Clark, H. E., 176 Clark, T. A. B., see Bennet-Clark, T. A. Clark, W. S., 230 Clarke, B., 136 Clark-Lewis, J. W., 396 Clauss, H., 168, 171, 172 Clayton, C. N., 258 Clayton, R. A., 385, 392 Clendenning, K. A., 37, 39, 78, 79 Cochran, G. W., 242 Cohen, G. N., 306 Cohen, M., 35, 117 Cohen, S. S., 345, 356 Cohen-Bazire, G., 61, 62, 66 Cohn, M., 130 Cole, J. R., 6 Coleman, N. T., 94 Coleman, R. E., 23 Coleman, R. G., 319, 322 Coles, C. H., 35 Colgrove, M. S., Jr., 308 Collins, F. M., 311 Colowick, S. P., 7 Colvin, J. R., 357 Comb, D. G., 352 Comber, R., 199 Commoner, B., 239, 240, 241, 244, 249, 258 Conilland, P., 17 Conklin, M. E., 390 Conn, E. E., 117, 118, 119, 123, 128, 129, 133, 134, 203, 233 Connell, T. D., 370 Conrat, H. F., see Fraenkel-Conrat, H., Constabel, F., 414 Constantin, M. J., 199 Contopoulou, R., 204 Cooil, B. J., 94, 283 Cook, F. S., 316 Cook, J. A., 305 Cooke, E. H., 304 Cooke, G. W., 304 Coon, M. J., 206 Cooper, C., 59, 119, 129 Cooper, J. R., 341, 369 Cooper, O., 60, 119 Cooper, W. D., 40 Cordner, H. B., 176 Cornfield, A. H., 301 Cornuet, P., 252 Cornwell, D. G., 43 Cory, R., 20, 21, 22, 296,

Cosentino, V., 43 Coulson, C. B., 320 Coulter, J. M., 387 Cowie, L. M., 369 Cowley, W. R., 304 Cowlinshaw, S. J., 38 Crafts, A. S., 13, 101, 108 Craig, J. C., see Cymerman-Craig, J. Craigle, J. S., 351 Cram, D. J., 409, 413 Crane, F. L., 118, 119, 120, 121, 123 Crane, J. C., 7, 8 Crawford, C. L., 6, 7, 306 Cree, C. B., 282 Crombie, W. M., 199, 209, Cromer, D. A. N., 226 Cronenberger, L., 115, 133 Cronyn, M., 190 Crossan, D. F., 268 Crowdy, S. H., 257, 264, 266, 267, 270, 425, 433 Crowley, N. C., 252 Croxall, H. E., 432 Cruzado, H. J., 176 Culler, D., 422, 423, 424, 428 Cummins, J. T., 351 Cunningham, H. S., 432 Curry, G. M., 443, 451 Curtis, R. W., 406, 409, 412, 420, 421, Cutinelli, C., 365, 367 Cutter, V. M., 390, 414 Cutting, S. G., 228 Cymerman-Craig, J., 317 Cynkin, M. A., 332

D

Dagan, C. B., see Bernard-Dagan, C. Dainty, J., 100 Dalbro, S., 23 Daly, J. M., 135, 337, 417, Damodaran, M., 332, 369 Dangeard, P., 136 Daniels, F., 124 Darwin, C., 7 Darwin, F., 7 Das, B. R., 316 Das, N., 399 Das, N. B., 302 Das, V. S. R., 41, 42, 116, 117, 131, 136 Das Gupta, A. K., 369 Daugherty, P. M., 224 Davidson, E. A., 352 Davidson, F. M., 45 Davidson, O. W., 266 Davies, D. D., 42, 117, 118, 119, 120, 130, 333, 334, 362 Davies, H. G., 34

Davies, R. E., 90, 97, 98 Davis, B. D., 335 Davis, D., 257, 259, 260, 262, 268, 428, 433 Davis, H., 230 Davis, J. B., 361 Davis, J. F. 16, 25, 281 Davis, J. F., 16, 25, 281, 291 Davis, L. D., 177 Dawes, E. A., 337 Dawid, I. B., 131 Dawson, J. E., 309 Dawson, R. F., 226 Day, K. M., 320 Dayton, P. G., 345 De, P. K., 311 Dean, L. A., 25, 289 Dear, E., 381 De Choudens, J. A. A., see Alvarez-De Choudens, J. A. Decker, J. P., 230 DeDeken-Grenson, M., 132 DeDuve, C., 136, 344 Deese, D. C., 447 Défago, G., 423, 426, 427, De France, J. A., 304 de Hoop, H., see Hoop, H. de DeKock, P. C., 95, 98, 116, 283 Delavan, L. A., 123, 131, 364 DeLey, J., 349, 351 del Rio, J. F. S., see Saiz del Rio, J. F. Delwiche, C. C., 133, 318 DeMoss, R. D., 336, 339, 361 Denevan, W. M., 229
Dent, K. W., 90, 95, 98
De Preter, C. van S., see
Sumere-De Preter, C. van De Ropp, R. S., 391, 392 Desai, A. D., 286 Desnuelle, P., 199 De Stevens, G., 185 De Tempe, J., 432 De Turk, W. E., 315 Deuel, H., 94, 98 Devlin, T. M., 59, 119, 129 Dewey, L. J., 189 Dhar, N. R., 309 Dickens, F., 341 Dierberger, R., 398 Dietz, P. M., 244 DiFazio, I. L., 198 Digar, S., 311 Di Girolamo, M., 355 Dimant, E., 359 Dimock, A. W., 259 Dimond, A. E., 257-76; 257, 259, 260, 261, 262, 428, 433 Dixon, G. H., 46 Dobrokhotova, I. N., 302

Doerschuk, A. P., 348 Dolk, H. E., 407, 408, 409, 412, 413, 415, 416 Domagk, G. F., 344 Doman, N. G., 367 Doorenbos, J., 147-84; 160, 173 Dorn, J., 446, 448 Dorner, R. W., 35, 46, 47, 117 Dorokhov, V. L., 25 Doudoroff, M., 53, 350, 351 Downs, R. J., 154, 164, 228 Doyle, W. P., 115 Dreier, A. F., 288, 303 Drews, G., 73 Drosdoff, M., 318 Drummond, D. O., 360 Drury, D. R., 331 du Buy, H. G., see Buy, H. G. du H. G. du Ducet, G., 117, 124, 127, 128, 129, 130 Duda, J., 422, 423 Dudman, W. F., 356 Duffett, N. D., 428 Duffett, N. D., 428 Dufrenoy, J., 421 Duggal, L., 308 Duggan, M., 198 Dugger, W. M., Jr., 135, 262, 338 Duhamet, L., 391, 392 Dunegan, J. C., 258 Durrell, M. E., 391 Duysens, L. N. M., 61, 62, 63, 64, 65 Dye, M. H., 264, 266, 268, 269 Dykstra, T. P., 35

E

Eagles, B. A., 362
Earl, J. M., 114
Eaves, C. A., 3
Eberhardt, F. M., 218, 219
Eck, H. V., 305
Edgerton, L. J., 7, 8
Edmondson, Y. H., 397
Edwards, G., 5
Efremov, R. V., 39, 45
Egami, F., 133, 313
Eggert, R., 15, 24
Eggleston, L. V., 100
Egner, H., 286
Ehrenberg, M., 133
Ehrensvard, G., 365, 367, 369
Eib, M., 449, 450
Eichenberger, E., 115
Eiler, J. J., 130
Eisenberg, F., Jr., 345, 354
Ekdahl, I., 284
Ekdahl, I., 284

Elbers, P. F., 74, 75 Eliasson, L., 127, 134 Elifolk, N., 317 Elliott, D. C., 125 Ellison, J. H., 432 Elsden, S. R., 65 El-Shishiny, E. D. H., 303 Emanuel, C. F., 35 Embleton, T. W., 3, 24, 224, 225, 282, 305 Emerson, H., 264 Emerson, R., 124 Emmert, E. M., 15, 17 Engelbert, L. E., 311 Engelmann, T. W., 453 Engels, X., 410 Engler, R., 243 Englesberg, E., 355 English, A. R., 260 Eno, C. F., 309 Eppley, R. W., 100 Epstein, E., 14, 19, 87, 88, 89, 90, 91, 92, 93, 94, 101, 102, 104, 108 Epstein, J. A., 432 Erdtman, G. A., see Aulin-Erdtman, G. Erdtmann, H., 223 Ereky, K., 37 Erickson, L. C., 136 Eriksson, E., 94 Ervin, J. O., 283 Erxleben, H., 408, 409 Ettala, T., 319 Evans, C. E., 302 Evans, H. J., 120, 121, 123, 133, 313, 333 Evenari, M., 133 Eversole, R. A., 80 Evrard, L., 427 Eyles, D. E., 38 Eyre, J. V., 210 Eyring, H., 78 Fahraeus, G., 426, 432 Falcone, A. B., 59

Fahraeus, G., 426, 432
Falcone, A. B., 59
Fanshier, D., 350, 351, 355
Farkas, G. L., 115, 132, 135
Farrant, J. L., 136, 137
Farrar, K. R., 393, 398
Fate, L. R., 432
Fawcett, C. H., 200, 201, 205, 206, 260
Fedorov, M. V., 311, 314
Fenner, L. M., 432
Fergus, C. L., 408
Ferrell, W. K., 232
Field, J. B., 354
Fife, J. M., 164, 322
Filipovich, I., 121
Fine, L. O., 305
Finean, J. B., 74
Finkle, B. J., 346, 348

Fireman, M., 26 Fischer, R., 25 Fisher, E. G., 7, 8, 15, 16, 17, 18, 19, 24, 25, 48, 313, 314 Fisher, J. E., 148, 162, 178 Fisher, M. E., 128, 133 Fitting, H., 380 Flaig, W., 290 Flanzy, J., 199 Flavin, M., 206, 207 Fleet, D. S. van, 34 Flokstra, J. H., 189 Fo, J., 13, 15, 17, 18, 21, 22, 23 Fogelberg, S. O., 136 Fogg, G. E., 301 Foley, E. J., 432 Folkes, B. F., 36, 114, 133, 301, 306, 321 Folkes, J. P., 306, 316 Foote, M. W., 272 Forbes, A., 18, 23 Ford, H. W., 305 Ford, J. H., 264 Fortanier, E. J., 148 Forti, G., 45, 118, 130, 135 Foster, J. W., 361 Fowden, L., 37, 38, 115, 319, 399 Fowells, H. A., 230 Fox, R. L., 289 Fraenkel-Conrat, H., 239, 240 Franke, W., 14, 197 Frans, R. E., 430 Fransson, P., 231 Franzke, C., 210 Fraser, D. A., 231 Fraser, L. M., 427, 433 Frazier, N. W., 178 Frear, D. S., 316 Frech, M. E., 45, 119 Frederick, L. R., 309 Freebairn, H. T., 42, 116, 117, 118, 128, 136 Freeland, R. O., 230 Frehse, H., 197 Freiberg, S. R., 15, 18, 21, 305 French, C. S., 54, 56, 78 French, D. I., 303 Frenkel, A., 55, 56, 58, 60 Frenkel, A. W., 53-70; 55, 56, 58, 59, 60, 64, 65 Frenzel, B., 307 Freudenberg, K., 185, 186, 188, 190, 193, 194 Frey-Wyssling, A., 14, 71, 74, 78, 79, 81, 82 Fried, M., 104, 107, 289 Fries, N., 426 Frigerio, N. A., 46, 123

Fritz, G., 114, 124, 128, 129, 130
Fritz, G. J., 124
Fujimori, E., 78
Fujinaga, K., 123
Fujita, A., 47
Fujiwara, A., 293
Fukuhi, H. N., 398
Fukushi, T., 36
Fuller, R. C., 55, 58, 59, 60, 62, 64, 65, 332
Funablki, S., 318

G

Gaffron, H., 58 Gale, E. F., 306 Galston, A. W., 46, 441, 442, 443, 444, 445, 446, 450, 451 Gamble, J. L., Jr., 59, 119, 129 Gander, J. E., 359 Ganguli, N. C., 358 Gansa, A. N., 21, 318 Garcia-Hernandez, M., 316, 367 Gardner, D., 264 Gardner, F. E., 7 Gardner, M. E., 4 Gareev, Z. Z., 177 Garman, W. L., 295 Garner, W. W., 9 Garren, R. G., 7 Garrett, S. D., 225 Gates, C. M., 433 Gatley, F. M., 193 Gauch, H. G., 87, 262, 301 Gauman, E., 261 Gaur, B. K., 25, 129 Gautheret, R., 391, 432 Gawron, O., 198 Gayed, S. K., 433 Geisbuhler, H., 190 Geismann, T. A., 396 Geissler, T., 25 Geissmann, J., 423 Geller, D. M., 58, 59, 60, 61, 62, 65, 66 Gentile, A. C., 232, 411, 416, 428 Geraldson, C. M., 16, 25 Gerassimova, H., 379 Gericke, S., 286 Gerola, F. M., 134 Gerretsen, F. C., 309 Gest, H., 65, 66 Gettkandt, G., 451 Gewitz, H. S., 333 Ghosh, S. K., 309 Gianetto, R., 136 Gibble, W. P., 212 Gibbs, M., 329-78; 114, 330, 332, 337, 338, 340, 365, 367 Gibson, D. M., 213

Gibson, M. R., 303 Gierer, A., 239 Giese, A. T., 66, 80 Gillespie, R., 360 Gilson, M., 166 Ginoza, W., 35, 117, 239, 240, 243, 246 Ginsburg, A., 342 Ginsburg, V., 350, 351, 354, 355 Giovanelli, J., 115, 118, 207 Giri, K. V., 331 Gjerstadt, G., 423, 425, 432 Gladyshev, B. N., 34 Glaser, L., 352, 358 Glass, B., 298, 301, 310, 311, 312, 313, 315 Glasziou, K. T., 39, 135 Gledhill, V. H., 289 Glock, G. E., 344 Goddard, D. R., 113, 120, 121 Godnev, T. N., 39, 45, 71 Godneva, M. T., 209 Goedheer, J. C., 74, 75 Goff, E. S., 2 Gokhalé, N. G., 304 Goldacre, P. L., 445 Goldschmidt, E. P., 360 Goldstein, E., 130 Gomez, J. C., see Carmona-Gomez, J., Gonzalez, J. D. L., 89, 91 Goo, M., 233 Good, N., 131 Goodman, R. N., 258, 269 Goodwin, B. C., 117 Goodwin, T. W., 57, 61 Gopalkrishnan, K. S., 263 267 Gordon, S. A., 381, 413, 444, 449, 450 Gorham, E., 26 Gorham, P. R., 217 Goris, A., 391 Gorter, C. J., 176 Gössel, G., 453, 454 Gothoskar, S. S., 273 Gott, M. B., 173 Gottlieb, D., 263, 264, 271, 432 Gowing, D. P., 13, 15, 17, 18, 20, 21, 22, 23, 176 Grabowski, R., 331 Grace, N. H., 200, 432 Granick, S., 71 Grant, S. A., 323 Gray, R. A., 265, 269, 270 Greathouse, G. A., 357 Green, D. E., 197 Green, M., 356 Greenberg, D. M., 334 Greenblatt, C. L., 77, 82 Greenland, D. J., 309 Gregory, F. G., 154, 173 Gregory, J. D., 58, 61, 62

Gregory, J. M., 119, 120 Gregory, K. F., 270 Greiner, C. M., 334 Grelecki, C. J., 198 Grenson, M. DeD., see DeDeken-Grenson, M. Graulach, V. A., 160, 427 Grieve, B. J., 251 Griffith, J. E., 226 Griffith, T., 364 Griffiths, M., 62 Griffiths, S. K., 127 Grindley, D. N., 210 Gris, E., 13 Grisolia, P., 368 Grollman, A. P., 345 Gromet, Z., 358 Grömmer, J., 224 Gross, S. R., 336 Grossbard, E., 271 Grossman, A., 344 Grossman, L., 345 Grossowicz, N., 315 Grove, J. F., 264, 267 Gruen, H. E., 405-40; 407, 414, 423, 451, 452 Grunes, D. L., 305 Gryder, R. M., 352 Guengerich, H. W., 258 Guernsey, F. S., 175 Guilliermond, A., 41 Guiscafre-Arillaga, J., 431, 433 Guitton, Y., 233 Guliakin, I. V., 26 Gumilevskaya, N. A., 47 Gundersen, K., 309 Gunsalus, I. C., 330, 336, 339, 349, 362, 363 Gunthardt, H., 321 Gustafson, F., 228 Gustafson, F. G., 14, 17, 20, 136 Guthrie, J. W., 272 Guttenberg, H. von, 158, 161, 414, 418, 430 Gutter, Y., 433 Guttridge, C. G., 157 Guttschick, V., 225 Guzman, M. A., 36 Gwynne, D. C., 432 Györffy, B., 394

Haag, H. P., 6, 21 Haagen-Smit, A. J., 391, 393, 408, 409 Haans, A. J. M., 77 Haas, A. R. C., 3 Haas, D. W., 119, 120, 125, 126, 128, 129 Haas, H. J., 302 Hackett, D. P., 113-46; 41, 101, 115, 116, 117, 118, 119, 120, 121, 122, 123,

124, 125, 126, 127, 128, 130, 134, 136 Hacskaylo, E., 225, 226 Haddock, P. G., 232 Haesloop, J. G., 160 Hagemann, A., 174
Hagen, C. E., 89, 92, 101, 102, 103, 104, 106, 107, 129, 289 Hagihara, B., 121 Hagler, T. B., 24 Haidasch, I., 424 Hain, W. F., 368 Haise, H. R., 305 Hall, C. B., 15 Halldal, P., 453, 454 Haller, M. H., 7 Hamilton, J. M., 258, 259, 264 Hamner, C. L., 231, 423, 428 Hamner, K. C., 14, 26, 151, 156, 157, 160, 170 Hanahan, D. J., 216, 217 Handley, R., 89, 91, 92 Hanford, J., 334 Hanna, C. G., 175 Hannapel, R. J., 90, 107, 108, 289 Hänsel, H., 175 Hansen, E., 115, 216 Hansen, R. G., 360 Hanson, E. A., 75 Hanson, J. B., 89, 90, 91, 93, 95, 128, 133, 134, 136, 137, 283 Harada, R., 15 Harbury, H. A., 46, 123 Hardenbrook, H., 360 Harder, R., 151, 160, 166, 167, 168 Harding, R. B., 26 Hardman, E. E., 199, 209, 210 Harley, C. P., 24 Harley, J. L., 124, 135 Harris, D. G., 289 Harris, E. J., 87 Harris, G. P., 303 Harrison, B. D., 243, 247, 248, 251 Harrison, H. J., see Heslop-Harrison, J. Harrison, J. A., 87, 90, 93, 94, 95, 98, 109
Harrop, G. A., Jr., 339
Hart, H., 432
Hartelius, V., 421
Hartmann, H. T., 157 Hartree, E. F., 118, 121, 124, 127 Hartt, C. E., 15, 18, 23, 189 Hasegawa, M. Y., 233 Hashimoto, T., 281, 282 Haskins, F. A., 134

Hassan, M., 348

Hassid, W. Z., 348, 350, 351, 352, 354, 355, 358 Hatano, K., 224, 233 Hatch, A. B., 226 Hatch, M. D., 121, 124, 330 Hattori, A., 306 Hattori, S., 233, 406, 408 Haupt, W., 148, 174, 175, 441, 452 Hauser, G., 356, 357 Havis, L., 8 Hawkins, A. R., 410, 414, 417, 419 Hawkins, G. R., 345 Hawkins, G. W., 25 Haywood, H. R., 100 Heath, E. C., 342, 357 Hebb, C. R., 136 Hegbonn, L., 193 Heim, A. H., 126 Heinz, F., 334 Heitz, E., 71, 81, 82, 136 Helder, R. J., 15, 20, 22, 90, 98 Hellmers, H., 234 Hellstrom, H., 71, 75 Helms, K., 7, 159, 245, 247 Helson, V. A., 136 Hemberg, T., 398 Hemming, H. G., 267 Hemphill, D. D., 258, 269 Henbest, H. B., 393, 397 Henderson, J. H. M., 391, 400, 447 Hendricks, S. B., 150, 154 Henke, O., 322 Henze, R. E., 272 Hermerline, A., 352 Hernandez, G. M., see Garcia-Hernández, M. Hers, H. G., 344 Herschberg, L. H., see Heymann-Herschberg, L. Hershey, A. D., 240 Hertz, B. N., see Nordbring-Hertz, B. Heslop-Harrison, J., 148 Hess, C. L., 193 Hess, D., 174 Hess, E. H., 45 Hessayon, D. G., 427 Hestrin, S., 357, 358 Hewitt, E. J., 48, 313, 314, 321 Hewitt, W. B., 4 Heydeman, M. T., 215, 362 Heyes, J. K., 134 Heymann-Herschberg, L., 14, 17, 24 Heyn, A. N. J., 407, 413 Hibbard, P. L., 4, 5, 6 Hickman, D. D., 55, 56 Hickman, J., 341, 343 Hicks, R. M., 317 Hidaka, Z., 264, 268, 269

Hield, H. Z., 7 Hietala, P. K., 272 Higashi, S., 430 Higashino, S., 15, 17, 19, 20, 21, 22 Highkin, H. R., 175 Higinbotham, N., 89, 90, 91 Hilditch, T. P., 197, 210, 211 Hill, G. N., 309 Hill, H. H., 284 Hill, R., 41, 56, 78, 121, 124, 125, 127, 332 Hillary, E. P., 362 Hillis, W. E., 396 Hillman, W. S., 385, 392 Hilton, R. J., 15, 17 Hinnawy, E. I. el, 165 Hinreiner, E., 396 Hinsvark, O. N., 15, 19, 21, 24 Hirata, S., 406, 407, 408, 409, 410, 411, 413, 416, 417, 418, 420 Hird, F. J. R., 135, 303 Hirekerur, L. R., 286 Hitchborn, J. H., 246 Hitchcock, A. E., 7 Hitt, R. G., 228 Hlopenkova, L. P., 173 Hoagland, D. R., 4, 5, 6, 91, 98 Hochster, R. M., 343, 348 Hodge, A. J., 77, 97, 136, 137 Hoff, D. J., 16, 17, 18 Hoffman, C. E., 344 Hoffman, M. B., 7, 8 Hoffman-Ostenhof, O., 131 Hofmann, E., 293 Hofstee, B. H. J., 103, 197 Hofsten, A. v., 423 Hofsten, B. v., 423 Holden, M., 36, 40 Holdsworth, M., 149 Holldorf, A., 334 Hollman, S., 343 Holly, K., 13 Holman, R. T., 197 Holmberg, D. M., 24 Holmes, F. O., 249 Holms, W. H., 337 Holzer, H., 334 Honda, S. I., 119, 120, 127, 134 Honert, T. H. vanden, 89, 101 Hooker, H. D., 453 Hoop, H. de, 309 Hope, A. B., 88, 89, 90, 91, 93, 94, 96, 97 Hopkins, D. P., 292 Hopkins, H. T., 102, 103, 106, 127 Horecker, B. L., 41, 339, 340, 341, 342, 343, 344, 349, 369 Horie, K., 15, 17

Horner, K., 278

Horning, E. C., 224 Horowitz, H. H., 348 Horowitz, S. T., 352 Horsfall, J. G., 257-76; 257, 259, 261, 262, 265, 272, 423, 433 Hoskin, F. C. G., 216 Hotson, H. H., 414 Hotta, Y., 322 Hough, L., 368 Housley, S., 393, 398 Howard, F. D., 119, 128, 134 Howell, M. J., 176 Howell, R. W., 128, 133 Howells, J. D., 344 Hsia, Y. T., 432 Huang, P. C., 356 Huart, A., 232 Hubbard, J. K., 224 Hubbard, R., 80 Hubert, E. E., 232 Hudson, W. R., 35, 117 Huey, E., 320 Hulme, A. C., 135 Humbert, R. P., 304, 309 Humphrey, G. F., 119 Humphrey, J. D., 224 Humphreys, T. E., 119, 120, 123, 135, 204, 338 Humphries, E. C., 99, 246 Hungate, F. P., 16 Hunter, F., 292 Hurwitz, J., 41, 341, 342 Hussey, G., 171, 172 Hutchings, B. L., 391 Hutton, C. E., 287 Huzii, S., 428 Hylmö, B., 90, 91, 94, 102, 108

I

Ibanez, M. L., 57, 58 Ibrahim, I. A., 433 Ichihara, A., 334 Ihnen, E. D., 57 Ilida, S., 293 Ilmura, Y., 128 Il'ina, T. K., 314 Imamura, S., 149, 158, 160, 162 Imshenetskiĭ, A. A., 30 Ingram, J. M. A., 200 Inman, R. E., 417, 420 Inoue, N., 431 Isaac, I., 322 Isherwood, F. A., 348 Ishihara, T., 26 Ishii, M., 241, 244 Ishikawa, S., 346 Ishikawa, Y., 330 Ishiwara, M., 15 Ito, K., 428 Ito, T., 331 Itzerott, D., 426 Ivanko, Sh., 320

Ivanoff, T., 423, 424, 428 Iwasaki, H., 311 Izmailov, A. F., 48

J

Jackson, P. C., 89, 90, 102, 103, 106, 107, 129 Jacobi, G., 316, 331, 332 Jacobson, L., 89, 90, 91, 92, 102, 107, 108, 289 Jagannathan, V., 332 Jagendorf, A. T., 40, 61, 64, 117, 118 James, W. O., 35, 41, 42, 89, 113, 115, 116, 117, 120, 124, 125, 127, 128, 131, 133, 136 Jamison, F. S., 15 Janes, W. O., 369 Jang, R., 94, 348, 354 Janke, A., 405, 422, 423 Jansen, E. F., 94 Jansson, S. L., 304 Javillier, M., 3 Jeener, R., 241, 242, 244, 249, 258 Jefferson, W. E., 361 Jeffery, R. N., 319 Jefferys, E. G., 263, 264, 271 Jeffreys, D. B., 427 Jennings, D. H., 124, 135 Jennings, H. S., 453 Jennings, P. R. 148 Jenny, H., 89, 91 Jensen, H. L., 430 Jensen, P. B., see Boysen-Jensen, P. Jensen, W. A., 134, 306 Jenson, C. A., 3 Joffe, S., 360 Johns, C. G., 26 Johnsen, G. V., 16, 20 Johnson, C. M., 288 Johnson, G., 272 Johnson, J., 34 Johnson, K. E. E., 16, 25, Johnson, M. P., 90, 109 Johnston, E. S., 444 Johnston, F. A., Jr., 209 Johnston, F. B., 120, 122 Johnston, J. A., 57 Jolchine, G., 115, 131 Jones, D. R., see Rudd Jones, D. Jones, E. R. H., 393, 397 Jones, J. K. N., 368 Jones, W. N., see Neilson-Jones, W. Jones, W. W., 3, 24, 224, 225, 282, 291, 305 Jump, J. A., 263, 267, 408, 409, 410, 411 Junges, W., 173 Jungwirth, C., 131

K

Kahn, A., 46, 47 Kahn, J. S., 283 Kaindl, K., 25 Kalckar, H. M., 358 Kalinenko, V. O., 309 Kalinkevich, A. F., 305 Kalishevich, S. V., 71 Kalmus, H., 247 Kaloyereas, S. A., 233 Kalvanasundaram, R., 261, 270, 406 Kamal, M., 427 Kamen, M. D., 56, 57, 58, 59, 60, 61, 63, 65 Kamerbeek, G. A., 48 Kamienski, E. S. v., see Stein v. Kamienski, E. Kamne, M. O., 66 Kandeler, R., 163 Kandler, O., 113, 114, 132 Kaneko, J. J., 341 Kanfer, J., 346 Kannan, S., 25 Kano, T., 233 Kaplan, N. O., 7, 45, 119, 351 Kardos, L. T., 15, 24 Karnovsky, M. L., 356, 357 Karrer, P., 443 Karschon, R., 229 Karunairatnam, M. C., 65 Kasperlik, H., 433 Kassanis, B., 34, 244, 245, 246, 247, 249, 250, 252, 258 Kasting, R., 318 Kates, M., 45, 216, 217, 218, 219 Kato, J., 135 Katz, E., 54 Katznelson, H., 348 Kaufman, S., 130 Kaul, R., 290 Kazaryan, V. O., 48 Kazuto, O. N., 302 Ke, B., 79 Kearney, E. B., 348 Keck, K., 131 Kefauver, M., 310 Kefford, N. P., 159, 381 298, 413 Kehr, A. E., 175 Keitt, G. W., 257 Keller, V. P., 94, 98 Kelley, E. G., 37 Kelley, W. P., 89, 92, 95 Kelsall, A., 3 Kemmler, H., 172 Kendall, W. A., 20, 135 Kennedy, E. P., 216, 217 Kenten, R. H., 35, 45, 47 Kerl, I., 424, 433 Kerns, K. R., 176 Kerr, A. E., 380 176 Kessler, B., 20, 49

Kessler, E., 312 Keyworth, W. G., 262 Khudairi, A. K., 156, 169 Kienholz, J. R., 258 Kienholz, R., 230 Kimber, G., 26 King, C. G., 348 King, F. E., 396 King, H. M., 89, 91 King, K. W., 364 King, L. J., 265 King, T. E., 339, 351 Kinoshita, S., 339, 406, 408, 432 Kinsky, S. C., 313 Kinzer, H., 35 Király, Z., 115, 132, 135 Kirkpatrick, H. C., 43 Kirkpatrick, J. D., 282 Kishaba, T., 305 Kitchener, J. A., 89, 92 Kitos, P. A., 339, 82 Kitos, P. A., 339 Klebe, J. F., 449, 450 Klechkovsky, V. M., 26 Kleczkowski, A., 36, 44, 47, 240, 242, 244, 252 Kleiber, M., 341, 359 Klein, R. M., 48, 202, 216, 416, 428, 441 Klein, W. H., 444 Klenow, H., 340 Klimovitskaya, Z. M., 306, 308 Klinker, J. E., 15, 17 Klinkowski, M., 257 Kluyver, A. J., 355 Klybas, V., 341 Kmetec, E., 128, 129, 135, 136, 137 Knight, S. G., 344 Koch, K., 409, 410 Kodati, M., 432 Koffler, H., 360 Kögl, F., 407, 408, 409, 412, 413, 414, 416, 441, Köhler, E., 428, 433 Kohler, H., 257 Koike, H., 423, 424, 425, 426, 428 Kojima, Y., 432 Kok, B., 63, 65 Kolomiec, I. A., 169, 177 Kolosov, I. I., 302 Kolotilova, A. I., 331 Komissarov, D. A., 231 Konishi, M., 147, 166, 423, 426 426 Könitz, W., 150, 154, 161 Kononova, M. M., 302 Konrad, E., 115, 132 Koontz, H., 13, 15, 17, 18, 19, 26, 296, 297 Koperzhinsky, V. V., 25 Kornberg, H. L., 118, 213, 214, 216, 362, 363, 364, 365, 366

Kortschak, H. P., 23

Kosmatyĭ, E. S., 306, 308 Kosobutskaya, L. M., 39 Kostermans, D. G. R., 408, 409, 412, 413, 416 Kostoff, D., 380 Kozlowski, T. T., 231, 232 Kraemer, L. M., 123 Kramer, P. J., 14, 24, 26, 88, 108, 226, 229, 230, 277 Krampitz, L. O., 361 Krasnovsky, A. A., 64, 77, Kratzl, K., 186, 188 Kraus, E. J., 2 Krause-Voith, E. Krauss, B., 13, 15, 17, 18, 21, 22, 23 Kravstrov, A. A., 39, 45 Kraybill, H. R., 2 Krebs, H. A., 100, 114, 213, 214, 362, 365 Kreger, D. R., 286 Kremers, R. E., 185-96; 188 Kretovich, W. L., 317 Kreutzer, E., 82 Krezanoski, J. Z., 130 Kribben, F. J., 170, 171 Krogmann, D. W., 61, 64 Krosnovskii, A. A., 39 Krotkov, G., 114, 131, 216, 351, 361, 369 Krugman, S., 224 Krupka, L. R., 268 Krupka, R. M., 134, 364 Krzysch, G., 13, 25 Kublanobskaia, G. N., 272 Kuc, J., 272 Kulaeva, O. N., 307 Kulkarni, B. D., 369 Kulkarni, B. S., 198 Kun, E., 316, 367 Kunikata, H., 430 Kunitake, G. M., 115, 118, 155, 335 Kuntz, J. E., 266 Kupke, D. W., 39, 66, 80 Kuprevich, V. F., 199, 234 Kurahashi, K., 334, 351 Kuranô, H., 433 Kurmies, B., 285 Kurnick, N. B., 34 Kurochkina, V. F., 290 Kursanov, A. L., 114, 307 Kurth, E. F., 224 Kurtz, E. B., 212 Kurtz, E. B., Jr., 212 Küster, H. J., 114 Kuykendall, J. R., 19, 21 Kuzin, A. M., 115, 216 Kuzin, A. S., 367 Kylin, A., 88, 90, 91, 94, 102, 107, 108

*

Labouriau, L. G., 442, 450

Lado, P., 198 Ladygina, M. E., 47, 121, 124 Lafon, J., 17 Lagasse, F. S., 209, 318 Laibach, F., 164, 165 Lakshmanan, M., 135 Lakshminarayanan, K., 261, 406 Lam, S., 176 Lambertz, P., 14 Lampen, J. O., 342, 344 Lamprecht, W., 334 Landolt, A. M., 114 Lang, A., 147, 149, 151 152, 153, 155, 157, 159, 160, 163, 164, 165, 166, 167, 169, 173, 177, 381 Lang, H. M., 65 Lang, M. V., 361 Langdon, R. G., 339 Langston, R., 155 Lanning, M. C., 345 Lardy, H. A., 208, 352, 359 LaRiviere, J. W. M., 368 Larsen, H., 64 Larson, W. E., 301 La Rue, C. D., 420 Laties, G. G., 87-112; 42, 89, 95, 98, 101, 102, 105, 106, 107, 109, 115, 116, 119, 128, 129, 130, 133, 135 Latimer, P. H., 39 Laudi, G., 119, 123, 135 Laurens, H., 453 Laurence, J. M., 320 Laws, J. O., 130 Laws, W. D., 301 Lawson, L. R., Jr., 183, 185 Lawton, K., 291, 294 Leben, C., 257 Lecat, P., 13, 17, 18, 19, 21, 22 Lecrenier, A., 24 Ledingham, G. A., 410, 414, 415, 420, 431 Lee, B., 320 Lee, K., 130 Lee, K., 130 Lee, S. W., 432 Leeper, R. W., 13, 15, 17, 18, 20, 21, 22, 23, 176 Lees, H., 309 Leggett, J. E., 89, 90, 91, 92, 93, 94, 102, 103, 106, 107, 129, 289 Leggiero, G., 364 Lehninger, A. L., 59, 119, 129, 345, 348 Leloir, L. F., 352, 353, 358 Lemin, A. J., 264 Lemoine, P., 241 Leonard, C. D., 5, 14, 17, Leonard, M. J. K., 233 Leonian, L. H., 422

Leopold, A. C., 155, 159, 175, 176, 177 Leopold, B., 191 Lessells, W. J., 303 Lesser, P., 114 Lester, R. L., 122 Letham, D. S., 399 Le Tourneau, D., 272 Levan, A., 424 Levitt, J., 88, 90, 137 Levy, C., 272 Levy, L. L., 368 Levy, R., 54 Lewis, I. I., 10 Lewis, I. P., 2 Lewis, J. W. C., see Clark-Lewis, J. W. Lewis, K. F., 337 Lewis, R. D., 6 Lewis, R. W., 423, 428 Leyon, H., 43, 71, 73, 74, 77, 81, 82 Leyton, L., 224, 225 Lichtenstein, Y., 315 Lida, K., 133, 313 Lieberman, M., 117, 124, 128, 129 Lilly, V. G., 422 Limasset, P., 36, 252 Lincoln, R. G., 157, 160 Lind, E. F., 430 Lindgren, B. O., 185 Lindhorst, T. E., 249 Lindner, R. C., 43 Lindstedt, G., 223 Lindstrom, E. S., 56, 57, 58, 65, 344 Lindstrom, R. S., 166, 167 Ling, K. C., 431 Lingle, J. C., 24 Link, A. D., 408 Link, G. K. K., 202, 216, 408 Link, K. P., 272 Linkola, H., 322 Linkola, H., Lino, A., 131 Linser, H., 397 Lioret, C., 320, 369, 391 Lipman, C. B., 3 Lipmann, F., 118 Lippincott, J. A., 240 Lipps, R.C., 289 Little, H. N., 303 Little, J. E., 272 Litwack, G., 265 Liu, P., 123 Liverman, J. L., 147, 149, 153, 154, 156, 158, 159, 161, 162, 166 Livingston, R., 78 Ljunggren, H., 426, 432 Lochhead, A. G., 302 Lockhart, J. A., 156 Lockwood, J. L., 268, 269 Loeffler, J. E., 66, 80 Loewenstein, H., 311 Loewus, F. A., 346, 348,

354, 367, 368 Lona, F., 149, 156, 160, 166, 167, 381 Long, C., 45 Long, W. G., 13, 14, 15, 16, 17, 19, 20, 21, 22 Longchamp, R., 432 Longridge, J., 166 Lookeren Campagne, R. N. van, 16 Loomis, W. D., 118 Loomis, W. E., 13, 15, 17, 19, 20, 21, 22, 148, 162, 430 Lorenz, O. A., 288 Lorenz, R. J., 304 Loring, H. S., 40, 368 Loughman, B. C., 98, 101, 107, 127, 130 Loveless, L. E., 423, 424 Lozano, B. A., see Arreguin-Lozano, B. Lubell, A. R., 127 Lubimenko, V., 54 Lucas, G. B., 269 Luchsinger, W. W., 59 Luck, J. M., 43 Luckwill, L. C., 200, 381, 397 Luke, H. H., 270 Lumry, R., 78 Lund, E. J., 135 Lund, H. A., 128, 134, 136, 137 Lundahl, W. S., 13 Lundblad, K., 280 Lundegardh, H., 87, 89, 90, 91, 93, 94, 95, 101, 102, 107, 108, 121, 122, 124, 125, 127, 129 Lundén, R., 224 Luntz, A., 453 Lynch, V. H., 73, 78, 115 Lynen, F., 197 Lyness, W. I., 194 Lyr, H., 432 Lyttleton, J. W., 40, 43 Lyzlora, S. N., 331

м

McAuliffe, C., 15, 17, 18, 20 McBain, A., 251 McCabe, A., 424 McCall, W. W., 17, 25 McClendon, J. H., 42 McClendon, J. H., 42 McClung, A. C., 305 McComb, A. L., 225, 226 McConnell, W. B., 115, 318, 361 McCready, R. M., 355 MacDonald, I. R., 90, 95, 98 McDonnell, P. M., 292 MacDougal, D. T., 231, 421 McDowell, L. L., 304 McElroy, W. D., 298, 301,

310, 311, 312, 313, 315 McElvain, N., 423, 424 MacGee, J., 350 McGilvery, R. W., 332 McGinnis, J., 321 McGivern, M. J., 136 MacGregor, J. M., 307 McGregor, W., 230 Machlis, L., 234, 407, 431 McIlrath, W. J., 178 MacIntire, W. H., 284 MacLachlan, G. A., 444 McLane, J. W., 3 McLane, S. R., 393 McLean, J. D., 77, 97 McLean, J. G., 272 McLean, P., 344 MacMillan, A., 306 MacMillan, J., 382 McNall, E. G., 314, 316 McNeal, F. H., 322 McNew, G. L., 259 McNulty, I. B., 136 MacRae, I. C., 310 MacRobbie, E. A. C., 100 MacVicar, R., 36
Madsen, N. B., 362, 363, 364
Magaldi, A., 367
Magee, W. E., 264
Mahan, J., 278 Makamura, S., 331 Malavolta, E., 6, 21 Maley, F., 352 Maly, R., 81, 82 Mandelstam, J., 306 Manil, P., 422, 423, 428 Mann, H. H., 286 Mann, P. J. G., 35 Manton, I., 136 Mapes, M., 389, 390 Mapson, L. W., 116, 118, 127, 345, 347, 348, 353 Maramorosch, K., 252 Marchenko, N. K., 258 Markham, R., 44, 46 Marks, J. D., 107, 127, 134 Marrè, E., 119, 120, 123, 135 Marschner, H., 290 Martens, R. A., 136 Marth, P. C., 7, 8, 405 Martin, C., 252 Martin, D., 10 Martin, D. C., 16, 20, 26 Martin, E. M., 43,118, 119, 120, 121, 126, 136, 137 Martin, H. F., 198 Martin, J. C., 6 Martin, J. P., 283 Martin, M., 271 Martin, N., 263 Martin, R. O., 204 Martin, R. P., 26, 101, 130 Martin, W. E., 286 Maruo, B., 128, 219 Maka, J., 406, 410 Mason, H. S., 190 Massini, P., 335

Mast, S. O., 453 Mathiesen, I., 127 Matikkala, E. J., 320 Matile, P., 135 Matkovskii, K. I., 212 Matsuhashi, M., 128 Matsumoto, H., 48 Matthews, B. C., 294 Matthews, R. E. F., 46, 241, 244, 247, 249, 258 Mattick, J. L., 56, 58 Mattson, S., 94 Mauney, J. R., 385, 392 Mawson, C. A., 231 Maxwell, E. S., 350, 354 Mayber, A. P., see Poljakoff-Mayber, A. Mayberry, B. D., 18 Mayer, A., 13 Mayer, A. M., 123, 131, 134 Mayr, H., 397 Mazelis, M., 118, 128, 129, 130, 217, 219, 334, 335 Meader, E. M., 8 Mears, K., 383, 389, 390, 399 Mederski, H. J., 16, 17, 18, Medina, A., 133, 314, 316, 330, 350 Meek, G. A., 130 Meeuse, B. J. D., 113 Mehrotra, B. S., 422 Meijer, G., 150, 161 Meiss, A. N., 284 Meister, A., 317 Melchers, G., 169, 173 Melik, S. S., 40 Melik-Sarkisyan, S.S., Melin, E., 225, 226, 232, 426, 427 Mellon, A. D., 77, 79, 80, Mencl, I., 130 Mendey, J., 36 Mendoza, H. C., see Castro-Mendoza, H. Menke, W., 78 Menon, R., 135 Menoret, Y., 320 Mentzer, C., 115, 133, 394 Mer, C. L., 443 Mercer, F. L., 249, 258 Mercer, F. V., 77, 97 Merewether, J. W. T., 185, 192 Mergen, F., 228 Merts, E. T., 48 Mes, M., 20, 22 Metzner, H., 78, 178 Metzner, P., 453 Meudt, W., 158, 159, 161, 173, 397 Meyer, J., 450 Michael, G., 290 Middleton, L. J., 26, 90, 91,

92, 123 92, 123 Mikhlin, D. M., 123, 134 Miles, E. F., 302 Milhaud, G., 132, 335 Millcic, D., 34 Millar, R. L., 264, 267 Miller, C. D., 26 Miller, C. O., 380, 382, 384, 385, 390, 392, 393, 399 Miller, G., 333 Miller, G. L., 80 Miller, G. W., 120, 121, 333 Miller, J. C., 175 Miller, J. J., 431
Miller, M. P., 26
Miller, O. N., 356
Miller, P. M., 258
Miller, W. G., 124 Millerd, A., 119, 121, 124, 128, 129, 135, 202
Millikan, D. F., 258 Mills, K. S., 442 Milthorpe, J., 90, 97, 98 Minnaert, K., 74, 75 Minshall, W. H., 136 Miramon, A., 212 Mirov, N. T., 223-38; 224, 228, 231, 232, 234 Mishra, J. N., 427 Misiorny, A., 223 Mitchell, H. K., 219 Mitchell, H. L., 225 Mitchell, J. E., 412 Mitchell, J. W., 167, 260, 262, 268, 405, 423, 428 Mitchell, K. G., 38 Mitsuhashi, S., 342 Mitsui, S., 15, 17 Mohr, H., 445 Moir, R. Y., 216 Mokrasch, L. C., 332 Molotkovskii, G. Kh., 48 Montant, C., 320 Montelaro, J., 15 Montgomery, J. D., 136 Moon, H. H., 24 Moor, D. P., 90, 107, 108, Morel, G., 252, 391, 398 Moreland, D. E., 232 Morgan, O. D., 260 Mori, T., 311 Morikawa, I., 121 Morita, S., 331 Morquer, R., 424 Morris, O. M., 3 Morris, W. T., 258 Morrison, R. I., 116 Mortimer, D. C., 358 Mortland, M. M., 294 Morton, R. K., 43, 118, 119, 120, 121, 126, 136, 137 Moschek, F., 397 Moscicki, Z. W., 20 Moser, W., 422

Moses, V., 360 Mosolova, I. M., 42 Moss, F., 127 Moss, L. K., 368 Mostafa, M. A., 406, 433 Mothes, K., 25, 123 Moulton, J. E., 410, 416, 418 Moyse, A., 115, 118, 131 Mozen, M. M., 311 Mruk, C. K., 304 Mueller, R. T., 308 Mühlethaler, K., 71, 81 Muir, R. M., 405 Mulder, E. G., 126, 282, 293, 305, 322 Müller, H. R., 72 Munch-Peterson, A., 350 Mundry, K. W., 249 Muntz, J. A., 340 Murano, H., 264, 268, 269 Murashige, K. H., 382 Murdia, M. S., 422 Murlin, J. R., 200 Murlin, W. R., 200 Murneek, A. E., 393 Murphy, J. R., 340 Murphy, Q. R., 87 Mutuskin, A. A., 123, 134

N

Naf, U., 398 Naïm, M. S., 406 Naito, N., 423, 424, 425, 426, 428, 430, 431, 432 Najjar, V. A., 331 Nakabayashi, T., 124 Nakada, H. I., 331 Nakata, S., 177 Nakayama, S., 153 Nakazawa, A., 422, 423, Nakazawa, K., 422, 423, 426 Namiki, M., 21, 25 Nance, J. F., 135 Napier, E. J., 269 Narayanan, T. R., 25 Naschke, M. D., 361 Nason, A., 7, 48, 314, 315 Natti, J. J., 257 Naylor, A. W., 114, 118, 128, 129, 130, 131, 248, 318 Neal, G. E., 115, 135, 216, Neely, P. M., 167, 381 Negisi, K., 233 Nehari, V., 244 Neilson-Jones, W., 225 Neish, A. C., 189, 342, 354, 357 Neller, J. R., 288 Nelson, C. D., 361 Nelson, E. C., 307 Netien, G., 394 Neufeld, E.F., 350, 351, 355 Nevgi, G. V., 198, 199 Newburgh, R. W., 114 Newcomb, E. H., 128, 129, 135, 136, 137, 202, 203, 204, 211 Newcomer, E. H., 41 Newman, A. S., 422, 423, 424, 428, 429, 430 Newman, D. W., 136 Newmark, P., 241, 244 Newton, G. A., 55, 56 Newton, J. W., 55, 56, 58, 59, 60, 61, 65 Nicholas, D. J. D., 133, 311, 314, 316, 330 Nichols, C. W., 258 Nickell, L. G., 381, 391, 400 Niedercorn, F., 188 Niederpruem, D. J., 123 Niel, C. B. van, 53, 57, 58, 64 Nielsen, N., 135, 224, 405, 406, 407, 408, 409, 410, 413, 415, 421 Nieman, R. H., 114, 131 Nienhaus, F., 247 Nienow, I., 266 Nightingale, G., 13, 15, 17, 18, 21, 22, 23 73 Niklowitz, W., Nilsson, E., 302 Nilsson, H., 226, 232 Nishikado, B., 431 Nishimura, M., 79 Nitsch, C., 303, 398 Nitsch, J. P., 303, 398 Nizamuddin, H., 198 Noggle, J. C., 104, 107 Noguchi, I., 40 Noguchi, K., 346 Nõmmik, H., 310 Nord, F. F., 185, 188, 191, 193 Nordal, A., 369 Nordbring, B., 428 Nordbring-Hertz, B., 423 Norman, T. M., 432 Northcote, D. H., 38 Norton, R. A., 20, 26 Nosseir, M. A., 303 Nuernbergk, E., 449 Nysterakis, F., 424, 425, 426, 432, 433

o

Oaks, A., 135, 338 Obata, Y., 330 Ochoa, S., 206, 207, 363, 364, 369 Odintsova, M. S., 40 Oehlkers, F., 174 Ogata, T., 318 Ogata, W., 423, 425 Oglno, C., 320 Ogle, W. L., 25

Ohara, M., 350 Ohmachi, K., 133, 313 Ohmura, T., 116, 128, 131 Okada, S., 331 Okanenko, A. S., 308 O'Kelley, J. C., 136 Okuda, M., 169 Okumura, F. S., 380, 382, 384, 393, 399 Okunuki, K., 121 Oland, K., 16, 17, 19 Oldewurtel, H. A., 48 Oleinikova, T. V., 164 Olmstead, A. J., 10 164 Olson, J. A., 365 Olson, J. A., 362 Olson, J. M., 63, 65 Olson, R. A., 15, 286, 288, Oltmanns, F., 453 Oppenoorth, W. F. F., 447, 450 Orchiston, H. D., 307 Ordin, L., 135, 283 Orgell, W. H., 14, 15, 22 Orstrom, A., 124 Orunescu, M., 369 Osawa, S., 322 Osipova, O. P., 39, 79 Osman, H. G., 57, 61 Ossia, E., 407, 431 Ostenhof, O. H., see Hoffmann-Ostenhof, O. Oster, G., 34 Osterhout, W. J. V., 89, 101 Otaki, K., 333 Otey, G., 304 Otten, R. J., 309 Overbeek, J. van, 13, 176, 265, 380, 390, 391, 405 Overstreet, R., 89, 90, 91, 92, 93, 95, 98, 102, 107 Owen, P. C., 48, 136, 250 Ozaki, K., 307

P

Paech, K., 319
Page, R. M., 422, 451
Page, R. M., 422, 451
Painter, E. P., 210
Pajenkamp, H., 304
Palade, G. E., 72, 73, 74, 82
Palleroni, N. J., 350
Palmer, J. E., 7
Palmer, J. K., 115, 333, 368
Palmstierna, H., 369
Panaiotoff, I., 423, 424, 428
Pandya, K. P., 358
Panteleeva, N. S., 331
Panzer, J. D., 246
Paquin, R., 135
Pardee, A. B., 53, 54, 55, 56, 73

Paris, D., 392 Parker, D. T., 301 Parker, E. R., 3 Parker, M. W., 150, 154 Parks, W. L., 283 Pastac, I. A., 26 Patau, K., 399 Patchett, A. A., 303, 399 Paton, D. M., 175 Pätzold, H. L. W., see Wiedow-Pätzold, H. L. Pavillard, J., 251
Payne, J. H., 18, 23
Payne, P., 15, 18, 21, 305
Payne, T. M. B., 302
Pazur, J. H., 135, 337
Padairul, H., 422, 432 Pedziwilk, F., 422, 423 Peers, F. G., 198 Peeters, G. J., 359 Pelczar, M. J., Jr., 426 Penner, J., 167 Perner, E. S., 136 Pessin, L. J., 225 Petersen, W. E., 359 Peterson, A. M., see Munch-Peterson, A. Peterson, L. L., 447 Peterson, W. H., 270 Petrosini, G., 25 Peturson, B., 431 Pew, J. C., 191, 192 Pfeffer, W., 7, 452 Phelps, W. R., 266 Philip, J. R., 96 Phillips, I. D. J., 158 Phillips, J. E., 227 Phinney, B. O., 167, 381 Pichinoty, F., 315 Pickels, G. E., 80 Pickett, T. A., 209 Piérard, A., 317 Pierpoint, W. S., 42, 46, 131 Pigman, W., 369 Pilet, P. E., 417, 418, 420, 421 Pirie, N. W., 33-52; 35, 36, 37, 38, 40, 42, 43, 44, 46, 47, 48, 239, 240, 241, 242, 246, 248
Pitman, M. G., 88, 89, 91, 93, 94, 96, 97
Platt, R. S., Jr., 413
Pleshkov, B. P., 290, 305, 320 Plowe, J. Q., 97 Pogell, B. M., 352 Pohl, R., 422, 450 Pokorny, R., 428 Poljakoff-Mayber, A., 117, 128, 133, 134, 135, 199, 202 Pollard, J. K., 301, 303, 319, 381, 389, 392, 393, 399 Pontremoli, S., 369 Pope, A., 295

Popoff, L., 423, 424, 428 Popper, C. S., 10, 116, 117, 119, 128 Posnette, A. F., 178
Possingham, J. V., 321
Post, L. C., 73, 74
Potter, G., 136, 137
Potter, G. F., 1 Pound, G. S., 7, 245, 247, 251 Powling, W. T., 37 Pramer, D., 257, 260, 264, 265, 266, 267, 270 Pratley, J. N., 135 Pratt, D. C., 65 Pratt, H. K., 134, 135, 368 Pratt, P. F., 291 Prescott, G. C., 264 Press, N., 136 Pressman, B. C., 130, 136 Preston, W. H., Jr., 268 Preter, C. van S. De, see Sumere-De Preter. C. van Price, C., 164 Prince, V. E., 8 Pringle, R. B., 261 Pringsheim, E., 453 Proebsting, E. L., Sr., 24 Prokof'ev, A. A., 209 Prokoshev, S. M., 115 Propst, L. M., 48 Purvis, E. R., 284 Purvis, O. N., 173 Putman, E. W., 350, 351, 355

0

Quackenbush, F. W., 210, 212, 272
Quak, F., 252
Quanjer, H. M., 251
Quartley, C. E., 116
Quayle, J. R., 365, 366
Quevauviller, A., 423
Quilan-Watson, F., 7
Quintin, S., 426

R

Raadts, E., 398, 449
Rabideau, G. S., 408, 415
Rabinowitch, E. I., 53, 58, 71, 77, 78
Rabinowitz, J. L., 354
Racker, E., 331, 339, 341, 342, 344, 369
Radhakrishnan, A. N., 317
Radley, M., 167, 381
Radner, B. S., 397
Rai, G. S., 231
Ram, C. S. V., see
Venkata Ram, C. S.
Ramachandran, L. K., 115
Ramakrishnan, C. V., 198,

199, 358 Ramasarma, T., 331 Ramstad, E., 423, 425, 432 Randolph, L. F., 385 Ranney, C. C., 432 Rao, P. L. N., 316 Rao, T. S., see Seshagiri Rao, T. Rasmus, R., 318 Ratner, E. I., 302 Rau, W., 168, 171, 172 Raulin, J., 3 Rautanen, N., 118 Raven, K. A., 157 Raven, K. A., 137 Ray, H. E., 307 Ray, P. M., 405, 419, 443 Raymond, W. F., 37, 38 Rayner, M. C., 225 Reazin, G. H., Jr., 330 Reber, E., 36 Redei, G., 394 Redemann, C. T., 393, 397 Reed, G. B., 114, 131, 216 Reed, H. S., 3 Reed, L. J., 369 Rees, W. J., 90, 92 Regeimbal, L. O., 24 Reichard, P., 345 Reindel, F., 322 Reinerl, F., 322 Reinert, J., 441-58; 441, 442, 446, 449, 450, 451 Reio, L., 365, 367 Reissener, H. J., 449, 450 Reissig, J. L., 352 Reithel, F. J., 360 Remmert, L. F., 42, 116, 117, 118, 128 Rendina, G., 206 Rennerfeldt, E., 272 Resende, F., 168, 169 Reuther, W., 3, 24, 224, 225, 305 Rhodes, A., 269 Rich, S., 263, 269 Richards, R. R., 422, 423, 424, 426, 430, 432 Richter, G., 332 Rickenberg, H. V., 306 Riemsdijk, J. F. van, 251 Riggio-Bevilacqua, L., 134, Righter, F. I., 228 Riker, A. J., 266, 270 Rimon, D., 199 Rio, J. F. S. del, see Saiz del Rio, J. F. Ririe, D., 301 Ritchie, J. L., 114 Ritzel, M., 167, 381 Roach, W. A., 35 Robbins, E. A., 331 Roberts, A. N., 308 Roberts, E., 406 Roberts, F. M., 245, 247 Roberts, J. L., 406 Roberts, R. H., 136 Robertson, J. D., 97

Robertson, R. N., 10, 87, 88, 89, 90, 95, 97, 98, 99, 102, 107, 119, 120, 134, 136, 137 Robertson, W. K., 287 Robins, J. S., 307 Robinson, G. M., 396 Robinson, K. C., 267 Robinson, R., 396 Robinson, R. A., 96 Robinson, R. S., 260, 266 Robinson, T. W., 409, 415 Rochow, W. F., 248 Rodenberg, S. D., 244 Rodwell, V. W., 368 Rogers, J. B., see Behnke-Rogers, J. Rogler, G. A., 304 Rohringer, R., 46 Rohrlich, M., 318 Roll, P. M., 344 Romaine, J. D., 278 Romani, R. J., 10, 128, 129, 134 Romanova, A. K., 115 Romberger, J. A., 122 Ronsdorf, L., 407, 408, 411, 421, 423 Ron'zhina, O. A., 48 Roodenburg, J. W. M., 176 Rose, I. A., 344 Roseman, J., 352 Roseman, S., 352, 357 Rosenberg, A. J., 117, 124, 127, 128, 129 Rosenberg, L. L., 64, 333, 334 Rosene, H. F., 135 Rosenstock, G., 136 Ross, A. F., 248 Rosseels, J., 244, 249 Rosselet, F., 282 Rossi, G., 119, 120, 123 Rossum, A. van, 148 Rothburr, L., 290 Rothe, M., 199 Rother, W., 422, 423, 432 Rothrock, J. W., 268 Rothschild, J., 336 Rotini, O. T., 318 Rouatt, J. W., 302 Rouiller, C., 136 Rouillier, C., 73 Routien, J. B., 226 Rowan, K. S., 130, 134 Roy, M., 432 Rozenberg, L. A., 309 Ruban, E. L., 309 Rubin, B. A., 47, 121, 124, 135 Ruch, F., 78 Rudd Jones, D., 267 Ruhland, W., 113, 114 Runeckles, V. C., 131 Rünger, W., 152, 153 Runnels, R. T., 285 Rusch, H. P., 432

Russell, R. S., 26, 89, 90, 91, 92, 97, 101, 107, 108, 130
Rysselberge, C. van, 241
Ryzkhov, V. L., 258

S

Sable, H. Z., 345 Sachs, R. M., 156, 163, 166, 168, 169 Sackston, W. E., 432 Sadana, J. C., 313 Sadaoka, G., 18, 23 Sager, R., 73, 74, 77, 78, 122 Saiz del Rio, J. F., 289 Sakamoto, T., 318 Sakamura, T., 409, 412, 416 Salisbury, F. B., 153, 159, 160, 161, 162, 394 Sall, T., 354 Saltman, P., 41, 115, 118, 155, 234, 330, 335 Saltza, M. H. von, 380, 382, 384, 393, 399 Saluste, E., 365, 367 Samborski, D. J., 135, 338, 420 Samish, R. M., 20 Samval, B. D., 135 Sander, E., 259 Sanders, F. K., 41 Sandman, R. P., 356 Sandwall, C. G., 424 Sanford, W. G., 13, 15, 17, 18, 20, 21, 22, 23 San Pietro, A., 65 Saris, N., 311, 316 Saris, N. E., 315 Sarkisyan, S. S. M., see Melik-Sarkisyan, S. S. Sarma, P. K., 118 Sartory, A., 423 Sartory, R., 423 Sarvas, R., 229 Sasaki, K., 307 Sato, C. S., 109 Sato, K., 15 Savary, P., 199 Sayre, R. M., 135, 337 Saz, H. J., 361, 362 Schaal, L. A., 272 Schachinger, L., 135 Schachman, H. K., 53, 54, 55, 56, 73 Schambye, P., 357, 360 Scheffer, F., 304 Scheffer, R. P., 273 Scheiber, D. L., 244 Schendel, H. E., 322 Schenker, C., 194 Scherr, G. H., 423, 424 Schever, A., 364 Schlegel, H. G., 132 Schleicher, J. A., 285 Schmid, C., 213

Schmidt, E. G., 423, 424 Schmidt, E. L., 307 Schneider, G. W., 305 Schneider, M. C., 363 Schneiderhöhn, G., 446, 448, 453, 454 Schneiderhöhn, G. S., see Schöne-Schneiderhöhn, G. Schneiderman, H. A., 124 Schnellen, C., 355 Schoen, U., 398 Schöne-Schneiderhöhn, G., 172 Schopfer, W. H., 406, 409, 422 Schou, L., 360 Schramm, G., 239, 240, 243 Schramm, M., 342, 357, 358 Schrank, A. R., 136, 400, 442, 449 Schreiber, M. M., 309 Schroeder, E., 341 Schroeder, E. A. R., 331 Schubert, G. H., 228 Schubert, W. J., 185, 188, 191, 193 Schuegraf, A., 198 Schuerch, C. J., 193 Schumacher, W., 14 Schuringa, G. J., 441 Schütte, K. H., 322 Schwabe, W. W., 149, 151, 161, 162, 170, 172, 173 Schwarz, K., 398 Schweigert, B. S., 344 Schwemmle, B., 153, 171 Schwertz, F. A., 74, 75, 79, Schwimmer, S., 330 Schwink, L., 130 Scott, F., 290 Scott, F. M., 14, 26 Scott, G. T., 100 Scott, K., 135 Scotti, R., 134 Scrimshaw, N. S., 36 Scully, N. J., 158 Seaman, G. R., 361, 362 Seamen, D. E., 130 Seeds, W. E., 34 Seegmiller, C. G., 348, 355 Seeley, R. C., 205, 206 Segal, S., 357 Seki, S. L., 118 Selders, A. A., 16 Sell, H. M., 135, 209, 393, 397, 398 Selman, I. W., 323 Sempio, C., 273 Sen, S. P., 155 Senez, J. C., 315 Sequeira, L., 421 Serbin, S. S., 25 Sergeyeva, R. V., 311 Serrano, S. L., 433 Servettaz, O., 114, 119, 120,

123 Seshagiri Rao, T., 286 Setterfield, G., 135 Shachori, A. Y., 232 Shafizadeh, F., 212 Shanes, A. M., 87 Shannon, L. M., 118 Shantz, E. M., 379-404; 382, 383, 384, 387, 388, 389, 391, 392, 393, 394, 395, 396, 397, 398, 399 Shapiro, R. E., 291 Shappirio, D. G., 127 Sharpensteen, H., 127 Sharvelle, E. G., 257 Shaw, D. A., 15, 17 Shaw, K., 303, 310, 311 Shaw, L., 269
Shaw, M., 135, 338, 410,
414, 417, 419, 420
Shaw, W. M., 284
Shealtiel, M., 117, 128 Shear, C. B., 318 Sheberstov, V. V., 25 Shedlovsky, T., 87 Sheffield, F. M. L., 34 Sherwood, H. K., 77 Shibata, K., 131 Shichi, H., 136 Shigeura, H. T., 335 Shih, S. H., 301 Shilo, M., 368 Shima, M., 285 Shin, E., 453
Shin, M., 121
Shiroya, T., 233
Shishiny, E. D. H. E., see El-Shishiny, E. D. H. Shive, W., 400 Shreeve, W. W., 344 Shtrausberg, D. V., 26 Shu, P., 357 Sidbury, J. B., 331 Siddiqi, A. M., 124, 197 Sideris, C., 13, 15, 17, 18, 21, 22, 23 Sideris, C. P., 26 Siegel, A., 239, 240, 243, 246 Siegel, S. M., 185, 190 Signer, R., 406, 409 Sih, C. J., 344 Silberstein, O., 13, 15, 25 Silina, E. I., 307 Silva, J. A., 18, 23 Silvar, W. S., 126 Siminoff, P., 262, 271 Simmonds, N. W., 388 Simmons, R. O., 210, 212 Simon, E. W., 120, 125 Simon, H., 449, 450 Simonis, W., 132, 133 Simpson, F. J., 342, 343 Simpson, J. R., 309 Singer, B., 240 Singer, T. P., 197, 198, 348

Singh, K., 332 Sironval, C., 147, 149, 167 Sisakyan, N. M., 40, 42, 47, 212 Sisler, E., 120, 121 Sisler, E. C., 119, 120, 121, 123 Sison, B. C., Jr., 191 Sissakian, N. M., 78, 79, 121, 132 Sistrom, W. R., 62 Sites, J. W., 281, 308 Siu, P., 360 Siu, R., 391, 393 Sivaramakrishnan, V. M., 118 Sjöstrand, F. S., 72, 74, 77, 136 Skaggs, D. P., 167 Skelding, A. D., 90, 92, 97, 90 Skerman, V. B. D., 310 Skinner, C. G., 400 Skok, J., 158 Skoog, F., 7, 190, 380, 382, 384, 385, 390, 392, 393, 399 Skoss, J. D., 14 Skvortsova, L. A., 308 Slankis, V., 225, 226, 231, 405, 421 Slater, W. G., 353, 354 Slatyer, R. O., 232 Slebodnik, J., 136 Slein, M. W., 343 Slife, F. W., 422, 424, 428 Sloane, G. E., 18, 23 Slogteren, D. H. M. van, 46 Slogteren, E. van, 46 Smika, D. E., 318 Smillie, R. M., 116, 118, 120, 128, 129, 202 Smirnov, B. P., 212 Smit, A. J. H., see Haagen-Smit, A. J. Smith, A. M., 36 Smith, C. L., 209 Smith, E. L., 79, 80 Smith, F. W., 318 Smith, G. E., 304 Smith, G. F., 117, 128, 134, 393, 397 Smith, H. H., 380 Smith, H. J., 178 Smith, J., 383, 389, 399 Smith, J. A., 294 Smith, J. H. C., 39, 66, 79, Smith, L., 41, 55, 56, 58, 59, 60, 61, 63, 65, 118, 120. 121, 122, 124 Smith, M. E., 225 Smith, M. S., 383, 398 Smith, P. F., 3, 305 Smith, R. A., 362, 363 Smith, R. L., 282 Smith, S., 126

Smith, V. R., 359 Smithies, O., 46 Smyrniotis, P. Z., 340, 341, 342, 369 Snow, A. G., 231 Snow, A. G., Jr., 229 Söding, H., 398, 449 Sogo, P. B., 77 Solms, J., 352, 354 Sols, A., 330, 350 Sommer, A. L., 3 Sondheimer, E., 259, 264 Sorgo, F., 422, 423 Sorokin, H. P., 136 Sorokin, S., 136 Sosa-Bourdouil, C., 13, 17, 19, 21, 22 Sowden, F. J., 302 Spadoni, M. A., 216 Spear, I., 154 Specht, A. W., 3 Spencer, D., 133, 314, 315 Spencer, D., 133, 314, 315 Spencer, D. M., 260 Spencer, M. S., 368 Spikes, J. D., 78 Spiridonova, G. I., 121 Spoerl, E., 423, 424 Spolter, H., 115, 118, 335 Sprecher, M., 335 Sprent, J. I., 175 Sprinson, D. B., 335 Sproston, T. J., 272 Squibb, R. L., 36 Squire, H. M., 26 Squires, C. L., 213 Sreenivasan, A., 310 Srinivasan, P. R., 335 Srere, P. A., 341, 369 Stadtman, E. R., 206, 207 Stafford, H., 120, 121 Stafford, H. A., 118, 367, 368 Stahly, G. L., 422, 423 Stahmann, M. A., 46 Stanier, R. Y., 53, 54, 55, 56, 61, 62, 66, 73, 78 Stanley, R. G., 223-38; 117, 133, 134, 203, 232, 233, 234 Starkey, R. L., 260, 266 Staudenmayer, T., 424, 432 Steele, J. H., 287 Steeves, T. A., 421 Steffen, K., 136 Stein v. Kamienski, E., 321 Steinacher, M. L., 3 Steinacker, M. L., 305 Steinberg, R. A., 3 Steiner, M., 197 Steinlin, K., 443 Steinman, E., 74, 77 Stenlid, G., 17, 19, 22, 23, 97, 306 Stephenson, M. L., 43, 132 Stern, H., 120, 122 Stern, J. R., 363 Stetten, D., Jr., 336

Stetten, M. R., 336 Stevens, P. G., 90 Stevenson, E. C., 423, 428 Stevenson, F. J., 302 Stevenson, E. C., 423, 428 Stevenson, F. J., 302 Steward, F. C., 379-404; 87, 90, 93, 94, 95, 97, 98, 109, 114, 118, 301, 303, 319, 381, 382, 383, 384, 385, 387, 388, 389, 390, 391, 392, 393, 394, 395, 396, 397, 398, 399 Stewart, B. A., 305 Stewart, I., 3, 14, 17, 24 Stewart, W. S., 7, 433 Stich, H., 131 Stickland, L. H., 130 Stier, T. J. B., 409, 415 Stiles, W., 87, 89, 90, 92, 95, 97, 98 Still, C. N., 185, 193 Stiller, M. L., 216 Stitts, C., 118, 335 Stitts, G., 115 Stjernholm, R., 365, 367, 369 Stoate, T. N., 225 Stocking, C. R., 71 Stockwell, P., 231 Stoddard, E. M., 257, 259, 260, 262 Stodola, F. H., 381, 405 Stojanovic, B. J., 303 Stokes, A., 267 Stokes, A. R., 34 Stokes, R. H., 96 Stolwijk, J. A. J., 127, 154, 163, 164 Stone, B. A., 343 Stone, E. C., 232 Stone, J. E., 189 Stout, P. R., 277-300 Stowe, B. B., 381, 397, 405, 413, 421 Strain, H. H., 78 Strascewska, Z., 422, 423, 428 Strogonov, B., 409, 412, 417. 418 Stromberg, V. L., 224 Strominger, J. L., 46, 345, 353 Strong, F. M., 380, 382, 384, 385, 392, 393, 399, 400 Struckmeyer, B. E., 136 Strugger, S., 81, 136 Strutz, I., 418, 430 Stuart, N. W., 427, 428, 432 Stubbe, W., 77 Stubbs, J., 267 Stubbs, R. W., 282 Stumpf, P. K., 197-222; 114, 115, 118, 128, 129, 202, 203, 204, 207, 208, 211, 212, 213, 214, 215, 216, 217, 219, 329, 343, 350

Subramanian, D., 261 Sugahara, K., 40 Sugano, S., 428 Sugino, M., 164 Sukhorukov, K., 409, 412, 417, 418 Sukhov, G. V., 234 Sukhov, K. J., 249 Sumere, C. F. van, 357, 410, 415, 431 Sumere-De Preter, C. van. 410, 415, 431 Sunderland, N., 134 Sundholm, N. K., 259 Sutcliffe, J. F., 89, 90, 91 92, 93, 94, 95, 97, 98, 101, 102, 104 Suter, P. J., 382 Swain, T., 396 Swanson, C. A., 13, 15, 19, Swanson, C. A., 13, 15, 19, 20, 231, 297
Swanson, C. R., 423, 432
Swartz, M. N., 45, 119
Sweep, G., 64
Sweet, D., 344
Sweet, D. V., 17, 19, 20, 22
Swim, H. E., 361
Switzer, C. M., 117, 128, 135 135 Synerholm, M. E., 200 Syrett, P. J., 128, 130, 308 Szafranski, P., 369 Szkolnik, M., 258, 259, 264

Tabachnik, M., 369 Taft, D. L., 137 Tagawa, K., 121 Tagawa, T., 94 Tager, J. M., 116, 118, 134, 338 Tai, K., 15, 19, 20, 21 Takagi, Y., 342 Takahashi, D., 15, 18, 23 Takahashi, H., 314, 315 Takahashi, T., 282, 296 Takahashi, W. N., 241, 244 Takamatsu, K., 79 Takashima, S., 40, 80 Takayama, M., 233 Takehara, I., 123 Takimoto, A., 158, 160, 162, 163, 165 Talbert, F., 400 Tallent, W. H. 224 Talukdar, S., 178 Tambiah, M. S., 381 Tamiya, H., 38 Tamm, C. O., 13, 16, 25, 308 Tanaka, A., 47 Tang, P., 313
Tani, T., 423, 424, 425, 426, 428, 430, 431, 432

Taniguchi, S., 133, 313 Tanimoto, T., 15, 18, 23

Tanner, K. G., 189
Tappel, A. L., 124, 197
Tarjan, A. C., 259 Tashima, Y., 149, 173 Tatum, E. L., 336 Taylor, F., 205, 206 Taylor, G. S., 257, 433 Taylor, H. F., 201, 205, Tawab, S. A. A., 423, 424 Tazawa, M., 454 Tecce, G., 355 Teissier, G., 54 Tererin, A. N., 77 Terner, C., 100 Testa, G., 118 Tetzner, G. V., see Voigtlaender-Tetzner, G. Teubner, F. G., 13-32; 13, 14, 15, 16, 17, 19, 20, 21, 22, 25, 176, 398 Thiessen, C. P., 368 Thijn, G. A., 176
Thimann, K. V., 7, 38, 43, 124, 126, 127, 131, 132, 154, 231, 397, 405, 406, 407, 408, 409, 412, 413, 414, 415, 416, 417, 419, 443 Thind, K. S., 308 Thomas, J. B., 54, 71, 73, 74, 75, 77 Thomas, J. J., 1 Thompson, J. F., 301, 381, 389 Thor, C. J. B., 209 Thorne, G. F., Jr., 269 Thorne, G. N., 13, 15, 17, 19, 20, 25, 297, 305 Thorning, J., 445, 446, 448 Thornton, I., 292 Thresh, J. M., 36 Throneberry, G. O., 134 Thung, T. H., 36, 251 Tichnor, R. L., 24 Tietz, N., 198
Tilley, J. M. A., 37, 38
Tinsley, T. W., 245, 250 250 Tishler, M., 409, 413 Titchener, E. B., 213 Tocher, R. D., 447 Todd, G. W., 136 Tokarskaya, V. I., 115, 216 Tolbert, N. E., 21, 118, 131, 290, 318 Tollin, G., 77 Tomizawa, C., 423, 424, 425, 426, 428 Ton, P., 368 Tonhazy, N. E., 426 Tookey, H. L., 217 Toole, E. H., 229 Toole, V. K., 229 Tootill, J. P. R., 269 Topper, Y. J., 357 Tourneau, D. L., see Le Tourneau, D.

Touster, O., 343 Towers, G. H. N., 134, 364 Towne, J. C., 368 Tracey, M. V., 364 Tranquillini, W., 230 Trefftz, G., 13, 25 Tremaine, J. H., 431 Trigg, C., 422, 423 Trudinger, P. A., 332 Ts'o, P., 109 Ts'o, P. O. P., 40, 43 Tso, T. C., 319 Tsui, C., 7 Tukey, H. B., 13, 14, 15, 16, 17, 19, 20, 21, 22, 24, 405 Tukey, H. B., Jr., 23, 298 Tulecke, W., 388 Tullander, V., 426, 432 Tumanov, I. I., 177 Tung, T. C., 208 Turchin, F. V., 302 Turel, F. L. M., 414, 420 Turfitt, G. E., 424, 432 Turian, G., 418, 419, 431, 432 Turner, D. H., 134 Turner, D. I., 269 Turner, E. R., 116 Turner, J. F., 10, 330, 358 Turner, J. S., 90, 97, 98, 130 Turrell, F. M., 22 Tveit, M., 270 Tyler, K. B., 309

Ţ

Uehara, G., 294
Uekküll, H. v., 304
Uhler, R. L., 284
Ukhina, S. F., 302
Ullman, E., 198
Ullstrup, A. J., 272
Umrath, K., 422, 423
Urayama, T., 410, 427
Uritani, I., 128, 129, 135, 136
Uritani, M., 135
Url, W., 35
Ussing, H., 99
Utter, M. F., 334, 345, 355, 365

V

Vaartaja, O., 228
Vagelos, P. R., 206, 207
Vähätalo, M., 319
Vahtras, K., 94
Vailyeva, N. A., 121
Vallet, C., 115, 133
Van Bavel, C. H. M., 289
van den Honert, T. H., see
Honert, T. H. van den
Van der Kerk, G. J. M., 257

Van Der Leun, A. A., 77 Van der Veen, R., 150 van der Want, J. P. H., see Want, J. P. H. van der Vandewalle, G., 117, 128, 129 van Fleet, D. S., see Fleet, D. S. van Van Halsema, G., 260 van Lookeren Campagne, R. N., see Lookeren Campagne, R. N. van Van Lookeren Campagne, R. N., 132 van Niel, C. B., see Niel, C. B. van van Overbeek, J., see Overbeek, J. van Van Raalte, R. H., 265 van Riemsdijk, J. F., see Riemsdijk, J. F. van Van Roey, G., 412 van Rossum, A., see Rossum, A. van van Rysselberge, C., see Rysselberge, C. van van Slogteren, D. H. M. see Slogteren, D. H. M. van van Slogteren, E., see Slogteren, E. van van Sumere, C. F., see Sumere, C. F. van van Sumere-De Preter, C. see Sumere-De Preter, C. van Varner, J. E., 21, 107, 127, 134 Vartapejyan, B. B., 113, 114 Vasudevan, K. V., 25 Vatter, A. E., 55, 56, 128, 134, 137 Vaughan, E. K., 36 Vegetti, P., 369 Venkata Ram, C. S., 261 Venkataram, C. S., 135 Venkataraman, R., 360 Venkataramani, K. S., 24 Vennesland, B., 118, 123, 131, 334, 335, 367 Vercier, P., 115, 133 Verhofstede, S., 349 Verkaaik, B., 407, 413, 414 Verkerk, K., 176 Verner, L., 7 Verner, L., 7 Vernon, L. P., 56, 57, 58, 61, 63, 64, 65 Vertregt, N., 73, 74 Vervelde, G. J., 93, 95, 98 Vickery, H. B., 48, 115, Viets, F. G., 6 Viets, F. G., Jr., 7, 305, 306 Veldstra, H., 383 Ville, A., 115, 133

Vining, L. C., 410, 415, 431 Vinograd, J., 43 Virtanen, A. I., 272, 310, 315, 316, 319, 320, 322 Vishniac, W., 40 Vite, J. P., 231 Vittorio, P. V., 114 Vitucci, J. C., 391 v. Kamienski, E. S., see Stein v. Kamienski, E. Vladimirov, G. E., 331 Vlassova, V. G., 331 Vlasyuk, P. A., 306, 308 Vlitos, A. J., 158, 159, 161, 173 Vlitos, J., 397 Voigtlaender-Tetzner, G., 193 Voinovskaya, K. K., 64 Voith, E. K., see Krause-Voith, E. Volk, G. W., 25 Volk, R., 15, 17, 18, 20 Völker, W., 333 von Buler, H., see Buler, H. von von Guttenberg, H., see Guttenberg, H. von von Saltza, M. H., see Saltza, M. H. von Von Wettstein, D., 136, 137 von Wettstein, D., see Wettstein, D. von Vyval'ko, I. G., 212

u

Wadkins, C. L., 59, 119, Wadleigh, C. H., 282 Waggoner, P. E., 261, 262, 433 Wagner, A. N., 123 Wagner, F., 424, 428, 431 Wahhab, A., 307 Wai, N., 432 Wain, R. L., 200, 201, 205, 206, 260, 381, 383, 398, 399, 433 Wakil, S. J., 213 Walker, D. A., 116, 117, 118, 133, 134, 202, 332, Walker, D. R., 15, 16, 17, 18, 19, 24, 25 Walker, J. C., 247, 272 Walker, N. A., 95, 97 Walker, P. M. B., 34 Walker, R. L., 430 Walker, T. W., 307 Wallace, A., 19, 21, 282, 308 Wallace, P. P., 423 Wallace, T., 2 Wallen, V. R., 264, 267 Wallihan, E. F., 14, 17, 24 Walrand, M. B., see

Bouillenne-Walrand, M. Wander, I. W., 281, 308 Wang, C. H., 115, 216 Want, J. P. H. van der, 36 Warburg, O., 131, 333 Ward, M. M., 127 Ward, R. C., 231 Wardrop, A. B., 187, 189, 193 Wareing, P. F., 151, 158, 162, 170, 227, 229 Warner, J. D., 3, 6 Warren, R. G., 286, 304 Wassinck, E. C., 54 Wassink, E. C., 38, 154, 422 Watanabe, A., 432 Watanabe, T., 411, 414 Watkeys, J. D., 200 Watson, D. J., 25, 251, 305 Watson, F. Q., see Quinlan-Watson, F. Watson, M. A., 251 Watson, R. W., 368 Wattiaux, R., 136 Way, A. M., 267 Waygood, E. R., 35, 117, 135, 444 Weathers, L. G., 245 Weaver, R. J., 8 Webb, J. A., 115, 319 Webb, J. L., 115 Weber, A. P., 423 Weber, F., 34 Weber, J. R., 22 Weber, R. A., 413 Webster, G. C., 21, 43, 301, 318 Webster, W. W., 449 Wedding, R. T., 136 Weeks, D. C., 97, 98 Weeks, T. E., 43 Wei, C. T., 431 Weichart, G., 132 Weier, T., 71 Weinberger, J. H., 8 Weinfeld, H., 344 Weinhouse, S., 337 Weinrach, R. S., 337 Weinstein, L. H., 284 Weintraub, M., 38 Weirich, C. L., 428 Weiser, H., 422, 423, 424, 428 Weisman, T. H., 423, 424 Weissbach, A., 41, 354 Welkie, G. W., 245, 247, 251 Wellensiek, S. J., 147-84; 152, 161, 167, 173 Weller, L. E., 135 Wenger, K. F., 226 Wenkham, N. S., 26 Went, F. W., 7, 152, 153, 174, 175, 229, 405, 406, 412, 417, 441, 446, 448 Wessels, J. S. C., 59

West, C. A., 167, 381, 382 Westley, J., 219 Wetmore, R. H., 391 Wetter, L. R., 198 Wettstein, D. von, 71, 77, 82 Weygand, F., 449, 450 Wharton, D. C., 408 Whatley, F. R., 59, 64, 66, 128, 131, 132, 334 Wheatley, J. R., 25 White, F. G., 57 Whitehead, T., 251 Whiting, G. C., 397 Whitney, J. B., Jr., 13, 15, 19, 20 Whittingham, C. P., 78, 131 Wiame, J. M., 130, 317, 369 Wick, A. N., 331 Widdowson, F. V., 304 Widmer, C., 351 Wiebe, H., 21, 290 Wiedow-Pätzold, H. L., 414 Wiegand, O. F., 449 Wightman, F., 201, 205, 206, 260, 381 Wikberg, E., 232
Wilbur, K. M., 226
Wilcox, H. W., 408
Wilcoxen, F., 7
Wildman, S. G., 35, 40, 46,
47, 117, 239, 240, 243, 244, 246 Wilkins, M. H. F., 34 Wilkins, M. J., 90, 97, 98, 136, 137 Wilkinson, J. F., 356 Willam, X., 410 Willenbrink, J., 135 Williams, A. H., 321 Williams, A. M., 58 Williams, D. E., 94 Williams, E. G., 94 Williams, G. M., 127 Williams, G. R., 60, 61, 63, 122, 129 Williams, J. H., 391 Williams, L. E., 268 Williams, M. S., 278 Williams, R. C., 240 Williams, R. F., 13 Williams, V. R., 330 Williams, W. A., 301 Williamson, D. H., 341 Willis, A. J., 133 Wilson, D. G., 364 Wilson, D. M., 355 Wilson, E. M., 263 Wilson, G., 393 Wilson, J. F., 447 Wilson, J. H., 251 Wilson, K. S., 390 Wilson, L. G., 133 Wilson, P. W., 65 Wilson, R. A., 258 Wiltshire, G. H., 246, 247 Windisch, S., 431

Winkler, A. J., 8 Winter, H. F., 258 Wisniewski, A. J., 304 Withrow, A. P., 133 Witkop, B., 303, 399 Witman, E. D., 422, 423, 424, 428 Witsch, H. v., 433 Wittcoff, H., 216 Wittwer, S. H., 13-32; 13, 14, 15, 16, 17, 19, 20, 21, 22, 24, 25, 135, 166, 167, 176, 295, 297, 393, 397, 398 Wohl, K., 89 Wold, F., 333
Wolf, F. A., 411
Wolf, F. T., 410, 411, 413, 414, 416, 418, 422
Wolfe, J. B., 331 Wolfe, R. S., 55, 56 Wolff, J. B., 133, 351 Wolfrom, M. L., 212 Wolin, M. J., 342, 343 Wolken, J. J., 71-86; 73, 74, 75, 77, 79, 80, 81, 82, 453 Wong, D. T. O., 362, 363, 364 Wood, H. G., 336, 359, 360, 368 Wood, J. G., 293, 301 Wood, R. K. S., 270 Wood, W. A., 342, 343, 349 Woodcock, D., 200 Woodford, E. K., 13 Woody, B. R., 65 Wooley, D. W., 261 Woolley, J. T., 16, 20 Workman, M., 135 Worth, W. A., Jr., 424 Wren, J. J., 219 Wright, E. B., see Barton-Wright, E.

Wright, E. W., 345 Wright, J., 271 Wright, J. M., 264, 267, 270, 271 Wu, H., 313 Wurnser, R., 54 Wyssling, A. F., see Frey-Wyssling, A.

Y

Yall, I., 360 Yamada, M., 198, 200, 310 Yamaguchi, M., 119, 128, 134 Yamaki, T., 381, 405, 421 Yamazaki, I., 123 Yanagihara, T., 409, 412, 416 Yanasugondha, D., 115 Yang, W. C., 115 Yarwood, C. E., 247 Yasnikov, A. A., 212 Yatazawa, M., 15, 17, 19, 20, 21, 22, 25, 26 Yemm, E. W., 34, 114, 118, 133, 301, 306, 321, 399 Yocum, C. S., 64, 122, 124, 125, 126, 127 Yonemoto, R. H., 339 Yoshida, D., 282, 330 Yoshida, S., 233 Young, H. C., 258 Young, H. Y., 13, 15, 17, 18, 20, 21, 22, 23 Young, J. L., 134 Young, L. C. T., 118, 119, 123, 128, 129 Young, R. E., 10, 116, 117, 119, 128, 135, 368 Young, R. H., 118 Young, V. M. K., 79

Yu, C. T., 175 Yuan, E. L., 124 Yukawa, Y., 428

7.

Zabin, I., 212 Zacharius, R. M., 319, 381 Zahner, R., 227 Zalokar, M., 78 Zamecnik, P. C., 43, 132 Zastrow, N., 348 Zaumeyer, W. J., 257, 260, Zavarzin, G. A., 309 Zbinovsky, V., 216 Zdanova, L. P., 164 Zeeuw, D. de, 149, 159, 161, 176 Zeevaart, J. A. D., 147, 148, 155, 156, 157, 158, 163, 164, 169, 173, 177, 178, 323 Zehnder, A., 423 Zelitch, I., 46, 123, 317, 364 Zeller, A., 213 Zeller, O., 177 Zentmyer, G. A. Zetschke, K., 158, 161 Zhurbitsky, Z. I., 26 Ziegler, H., 135 Zielinski, Q. B., 7 Zieriacks, H., 148 Zillig, W., 240 Zimmerman, P. W., 7, 200 Zimmerman, W. A., 416 Zinke, P. J., 224, 225 Zobel, M. P., 24, 175 Zsoldos, F., 320 Zuck, R. K., 148 Zucker, M., 272

SUBJECT INDEX

Abscission, 7 Absorption, foliar factors affecting, 13-20 rates, 17-18 transport and mobility, 20-21 Acetate carboxylation, 365 metabolism, 216 Actinomycin, 263 Adsorption exchange accumulation, 91-97 kinetics of, 95 metabolism and, 95 salts and, 88-89 sites of, 89, 92, 93, 94 Agriculture calcium salts and, 284 macronutrients and, 277 nitrate vs. ammonia in, 307-8 Agronomy, 24-25 Alfalfa and phosphorus, 289 Algae amino acids in, 320 glucose dissimulation in, 330 membranes in, 100 nitrate reduction in, 312 oxidation in, 348 as protein food source, 38 salt exchange in, 99-100 Alkaloids, 224 Amides, 317 Amino acids, assimilation by plants, 302-3 in chloroplasts, 79 in diseased plants, 322 formation of, 21 in leaf extract, 36-37 lignification and, 189 metabolism of, 118 in microsomes, 43 in pine pollen, 224 in pine seeds, 233 production of, 317-19 in soil, 302 see also Nitrogen nutrition Amino sugars, 352 Ammonia from nitrite, 314-16 in plant nutrition, 307-8

in soil, 304

Antibiotics

Ammonification, 303

Androgenic embryos, 379

Anthocyanin in embryo, 224

in plant disease control. 257-58 in seed coats, 270 in soil, 270 Antigens, 45-46, 246 Antimycin, 258 Apomictic development, 379 Apparent free space, 88, 96, 108 Apple flowering in, 177 foliar absorption in, 18 Aroid spadix, 124-25 Ascorbic acid glucose metabolism and, 347-48 oxidation of, 56-57 synthesis, 348 virus infection and, 246 Auxin, 381-83 detection of, 406-13 discovery of, 7 disease control with, 432-33 effect on fungi growth, 421-30 floral induction and, 158-59, 166 fungus diseases and, 416identity of, 413-15 isolation of, 397-98 morphological changes and, 432 in mycorrhiza, 226 phototropism and, 441, 444, 446, 447, 450 in pine trees, 230 production, 405-16

respiration and, 135 spore germination and, 432 storage disease control and, 405 virus infection and, 251 Avena curvature test for auxin, 406 Avocado, 10 calcium absorption in, 283

B

Bacteria antibiotics and, 260 growth and, 380 photosynthetic, 53-64 see also Bacterial chromatophores; Plant chemotherapy Bacterial chromatophores composition of, 53-56

enzymes of, 65-66 photocatalytic activities of, 56-65 photophosphorylation, 58-62 photosynthesis and, 53-67 reactions of, 53-67 structure of, 53-56 Bacteriochlorophyll, 61 developing fruit, 388 foliar absorption in, 18 Barium absorption, 16, 20 Barley root respiration, 127 Bean, 18 Bicarbonate and fat synthesis, 213 Biuret toxicity, 22, 318 Blackleg, 259 Bracken toxicity, 46 Brown rot, 194

Cacao, 18 Calcium cell elongation and, 283 crop need of, 281 foliar absorption of, 16, 20 mobility in plant, 297 relation to potassium, 281 salts, 284 Cambium, 227 Carbohydrates conversion from fat, 213-16 potassium and, 293 as respiratory substrates, 114 see also Carbon compound metabolism Carbohydrate-lignin bond, 192 Carbon compound metabolism, 329-69 Carbon dioxide phosphate uptake and, 289 virus infection and, 247 Carbon dioxide fixation in cell-free extracts, 64 photoperiod and, 154 Carbon monoxide resistant respiration, 124-28 Carotene-protein complex, 79 Carotenoids formation of, 319 function in chloroplasts, 78 photophosphorylation and, 61-62

Citric acid

synthesis of, 61 see also Phototropism Carrier sites, 100-8 Carriers in salt transport, 89, 91, 92, 100-8 localization and characterization, 106 synthesis and breakdown, 105-6 Carrot, 384 Catalase preparation, 46 Cauliflower and molybdenum deficiency, 314 Celery and magnesium, 281 Cell division, 382, 398-400 elongation, 283 growth balance in, 380, 388-89 virus infection and, 243-44 Cellulose metabolism, 357 Cell wall lignification of, 187 proteins in, 38-39 Chemotaxis, 432-33 Cherry leaf spot, 258 see also Plant chemothera-Chitin, 352 Chlorine absorption, 15-16, 20 Chlorophyll concentration in chloroplasts, 75 formation, 20 molecule structure, 73-74 Chlorophyll-lipoprotein linkage, 79 Chloroplast chemical composition of, 78-79 chlorophyll concentration in, 75 in citric acid cycle, 335 development of, 81-83 mitochondria from, 41-42 morphology of, 72-78 nitrogen in, 38 protein in, 39-41 reactions, 66 schematic structure of, 76, structure of, 71-83 Chloroplastin, 79 Chlorosis, 20 Chlortetracycline, 263 Chromatography, 381 for auxins, 413 for lignins, 193 Chromatophores, 72 bacterial, see Bacterial chromatophores enzymes of, 65-66 see also Chloroplast

Chromatoplasm, 73

Circulin, 263

cycle, 334, 361-68 potassium and, 282 virus infection and, 246 Citrus phosphorus uptake in, 291 Cobalt absorption, 16-17 Coconut milk fractionation of, 391 as growth substance, 384-85, 390-92, 395 Coffee, 18 Compound preparation, 368-Coniferin, 188 Coniferyl alcohol, 188 Copper absorption, 16-17, 20 Corn development of, 385 foliar absorption rate, 18 Corn caryopsis fractionation of, 394 as growth substance, 385 Cotton, 15 Cucumber, 18 Cuticle, 14 Cyanide-resistant respiration, 124-28 Cytochromes, 41 in chloroplasts, 78 in nitrate oxidation, 312 in nitrite oxidation, 309-10 oxidase, 120-21, 124, 125 oxidation of, 63 photophosphorylation and, 60, 65 respiration and, 119, 120

D

Denitrification, 310-11
6-Deoxy-hexoses, 355
Deoxyribose, 344
Deoxyribosenucleic acid, see
DNA
Dicarboxylic acid cycle, 366
Diffusion exchange, 99
Disease
plant composition and, 322
see also Auxin, fungus
diseases and; Virus
diseases
DNA, 42, 44, 79
Donnan free space
adsorption in, 89, 93
salt entry, 88, 96
Dyes as inhibitors, 60

1

Egg, 379
Electric field, 449
Electron transport
light-induced, 65
respiration and, 118-24

Electrophoresis, 193 Embden-Meyerhof-Parnas pathway, 329-33 Embryogenesis, 379 Endosperm, 379, 380, 384 Enolase, 333 Enzymes in amino acid production, 317 in carbon compound metabolism, 330-69 in chloroplast, 40 in chromatophores, 65-66 in fat catabolism, 215 in fatty acid oxidation, 203formation in leaves, 48 lignification and, 189 in mitochondria, 42 in nitrate reduction, 312, 313 in phospholipide hydrolysis,

in photo-oxidation, 57 in pine trees, 234 zinc and, 7 see also Lipase Ethylene synthesis, 368 Euglena gracilis, 455

216-17

Fat consumption in germination, 199 conversion into carbohydrate, 213-16 metabolism in higher plants, 197-219 respiratory substrates, 114 Fat synthesis bicarbonate and, 213 in vitro, 211-13 in vivo, 209-11 Fatty acid cycle diagram of, 201 oxidation of, 200-8 Fermentation, 432 Fertilization and growth, 379 Fertilizers, 303-6 Figs, 7-8 Fireblight, 258 see also Plant chemothera-Flagellates phototaxis of, 452-56 Flavins, see Phototropism Flavoproteins and phototropism, 441 Floral induction age of plant and light needed, 148 auxin and, 158-59 day-neutral plants, 174-78 endogenous rhythms, 169-

gibberellin and, 159 grafting experiments, 169 juvenile phase, 148-49 long-day plants, 162-68 photoperiodic control of, 147-78 relation between long and short days, 168-72 short-day plants, 149-62 translocation and, 157-58 Flowering, see Floral induction Flower initials, 2 Foliar absorption, see Absorption, foliar Foliar feeding crop response to, 23-25 Foliar sprays, 305 Fructose, 331-32 metabolism, 350 Fruit analysis, 3 crop response to foliar feeding, 23-24 fat synthesis in, 209 maturation and respiration, 134 nitrogen fertilization and, 305 ripening, 8 thinning, 8 Fruit trees phosphorus and, 2 zinc deficiency and, 3-7 see also Horticulture Fungi auxin effect on, 421-33 auxin production by, 405-16 diseases and auxin, 416-33 growth regulation in, 451 lignification and, 191 phototropism in, 450-52 Fungicide, see Plant chemotherapy Fungus disease and auxin, 433

G

Galactose metabolism, 350 Galacturonic acid, 355 Galls, 388, 420 Gametophyte, female, 388 Germination auxin and, 431 fat consumption in, 199 fat conversion into carbohydrate, 213 light and, 229 lipase activity in, 198 phosphorylation in, 134 respiratory rate in, 133 Gibberellins, 9, 381-82, 400 floral induction and, 159, 166 respiration and, 135

virus infection and, 252 Ginkgo, 388 Gliotoxin, 271 Glucosamine, 351-53 Glucose conversion to pyruvic acid, 329-30 fermentation, 339 metabolism, 336-40 oxidation diagram, 346 Glucuronic acid, 353 Glycerol metabolism, 208-9 Glycollic acid oxidase preparation, 46 Glyoxylate cycle, 213, 362-65 Glyoxylic acid reductase preparation, 46 Grafting, 169 Grana, 39 see also Chloroplast Grape, 18 Grasslands fertilization, 304 Griseofulvin, 264, 271 Growth chemical induction in relation to morphogenesis, 379-84 chemical regulation of, 379-401 photoperiod and, 226-27 in pine trees, 230 thermoperiod and, 226-27 time of flowering and, 148 Growth extracts, 390 Growth factors, source dia-grams, 386 Growth imbalance, see Tumors Growth-promoting agents. 381-84 morphology of, 384-90 sources of, 383-90 test systems, 384 Growth regulators, see

н

Auxins

Gum, 355

Haustorium, 200 Heartwood, 223 Herbicides, 309 Hexitols, 351 Hexokinase, 330 Hexose-pentose cycle, 345-46 Hexose-triose phosphate cycle, 348 Higher plants fat metabolism in, 197-219 phototropism in, 441-50 respiratory mechanisms in, 113-37 Hill reaction, 56, 57 Holochrome, 79 Hormones

respiration and, 135 sugar level and, 262 virus infection and, 251 see also Auxin Horse chestnut growth substance, 385, 395 Horticulture, 1-10 Humidity chemotherapy and, 269 foliar absorption and, 15, 16 Hydrazine, 316 Hydrogen transport, 118-24 Hydrolysis lipases, 197-99 phospholipides, 216-17 Hyper rixiny, 420 Hyphne, 451 Hypocotyls, diseased, 418 Hyponitrite, 316

IAA, 383, 394, 398, 441, Inhibition of calcium uptake, 281 of floral induction, 147-78 of growth, 388 of lipase, 198 of phosphate uptake, 101 of respiration, 124 Inhibitors of ascorbic acid oxidation, 57 of auxin destruction, 419 of growth during dark, 227 of infection, 247 of nitrification, 309 of photophosphorylation, 60-61 of respiration, 115 of transamination, 316 of transport, 20 Intact tissue lipide breakdown in, 199-200 Iodine absorption, 15-16 Ion absorption, 90, 91 Ion exchange, 107 Iron chlorosis, 282, 283 foliar absorption of, 16-17, 20 Irrigation, 278 Itaconic acid metabolism, 367

K

Kinetin, 135, 399-400 Kinins, 380, 382

L

Lactic acid dehydrogenase, 333

SUBJECT INDEX

Lactose synthesis, 359 Lamellae, 73, 74 and photosynthesis, 77 Latex, 34-35 Leaching from foliage, 22 Leaf absorption of macronutrients, 295-96 absorption of minerals, 13-27 acid in, 334 analysis, 2-3 auxin in, 417, 419 chloroplasts from, 39-41 disintegration methods, 34-36 enzymes in, 44-47 fungus infection and, 420 isolated components of, 38microsomes from, 42-44 mitochondria from, 41-42 nitrogen content of, 33 number and flowering, 148 phospholipides in, 218-19 as protein food source, 37-38 proteins, 33-49 uptake of antibiotics, 268-70 viruses in, 42-44, 244, 245 whole, 33-34 Leucoanthocyanins, 396-97 Lichee flowering, 177 Light anaerobiasis and, 62-63 auxin and, see Phototropism chloroplast research and, 39 floral induction and, 147-78 germination and, 229 nitrate reduction and, 312 reactions of chromatophores and, 53-67 respiration in, 131-33 see also Phototaxis; Phototropism Lignins, 185-94 Lime, 280 Limestone, 285 Lipase, 197-99 Lipide breakdown, 197-209 storage, 73 Lipoprotein, 74 Lipoxidases, 197 Little-leaf, 3 Long-day plants floral induction, 163-68 Lycomarasmin, 261 Lysimeter, 284, 285

M

Macronutrients, 277-98 foliar absorption of, 295-96 mobility in plant, 296-98 Magnesium deficiency and virus infection, 245 foliar absorption of, 16, 20 mobility in plant, 297 relation to potassium and calcium, 281 Malonic acid in chemotheraру, 258 Manganese absorption, 16-17, 20 Mannose metabolism, 350 Megaplast, see Chloroplast Methionine, 261 Microbiology of lignins, 193 Micro-organisms denitrification and, 310 nitrogen uptake in, 306 Microsomes from leaf, 42-44 Mineral nutrition foliar absorption, 13-27 in pine trees, 224-25, 232 Mitochondria, 41-42, 203, 207 electron transfer in, 120 enzymes in, 42, 119, 120, hydrogen transport in, 118 isolation methods, 116-17 light and respiration in, 131, 132 osmosis in, 137 protein in, 42

as respiratory apparatus, 136 as respiratory center, 116 respiratory chain and, 122 spectroscopy of, 121 virus infection and, 246 Molybdenum deficiency, 314 foliar absorption of, 16-17, 20 Morphogenesis

Morphogenesis biochemistry of, 390 growth induction and, 379-84 Mottle-leaf, 3

Mycorrhiza, 225, 421

N Nematodes and chemothera-

py, 259
Neomycin, 263
Nicotine, 36
Nitrate
comparison with ammonia
in plant nutrition, 307-8
reduction, 311-16
sulfur and, 306
Nitrification, 308-10
Nitrogen
agricultural use of, 278
assimilation and respiration, 133, 306
effect on fruit trees, 2

excretion, 307 fixation, 65, 301 in leaf, 33 as macronutrient, 298 metabolism, 298, 322 molybdenum and, 298 in soil, 301-6 uptake and transport, 306-7 Nitrogen nutrition, 301-23 fertilizers, 303-6 foliar sprays, 305 fruit quality and, 305 organic compounds, 301-6 soil, 301-6 uptake and transport, 306-7 Nuclei, 42 Nucleic acid in chloroplasts, 78 phosphate uptake and, 290 see also Virus diseases Nucleoprotein, 40 see also Virus diseases Nucleotides, 59, 130 photoreduction of, 64 Nutrition nitrogen, 301-23 see also Macronutrient elements

C

Oil, see Fat metabolism
Organic acid
metabolism, 117-18
nitrate nutrition and, 308
Osmosis in mitochondria,
137
Oxidation
of cytochrome, 63
diagram, 205
of fatty acids, 200-8
Oxidation-reduction, 62-63
Oxygen
denitrification and, 311
as electron acceptor, 113
poisoning, 116
Oxytetracycline, 263

P

Pasteur effect, 130 Pasture fertilization, 304 Pathology, see Plant chemotherapy Patulin, 264, 271 Pea flowering, 174-75 Peanut, 282 Penicillin, 264 Pentose cycle, 114 Pentose interconversions, 342-44 Pentose phosphate pathway, 336-45 Peptide bond synthesis, 79 Permeability barrier, 97-100

auxin production and, 415 foliar absorption and, 15, 19 photophosphorylation and, 58 Phenols as chemotherapeutants, 272 Phobophototaxis, 452 Phosphate uptake inhibition, 101 Phosphine, 292 Phosphoglucomutase, 331 Phosphohexose isomerase, Phospholipides biosynthesis of, 217-19 hydrolysis of, 216-17 isolation of, 216 Phosphorus absorption of, 288-93 agricultural use of, 278-88 foliar absorption of, 15-16, 20, 22 mobility in plant, 296-97 nitrogen and, 288, 305 photosynthesis and, 287 in sea water, 287 soil calcium and, 288 soil level of, 288 soil nitrogen and, 288 toxicity, 290-91 Phosphorylase as inhibitor, 330 Phosphorylation, 57, 132 mechanisms of, 129 regulation, 130 respiration and, 127, 128-31 storage, 130 Photochemical apparatus, 71 Photo-oxidase, 56-58 Photoperiodicity carbon-dioxide fixation and. 154 floral induction and, 147-78 pine seedlings and, 226-30 vernalization and, 172-74 Photophosphorylation, 58-62 enzymes for, 65 Photoreduction of nucleotides, Photosynthesis bacterial chromatophores and, 53-67 carotenoids and, 62 cytochromes and, 61 light and respiration, 131-32 in pine trees, 230 virus infection and, 250-51 see also Chloroplast Phototaxis, 452-56 Phototropism in fungi, 450-52 in higher plants, 441-50 Physiology and horticulture,

1-10 Phytohormone, see Auxin Phytopathology auxin production and, 416 respiration and, 135 Pigment complex in choroplast, 79-81 see also Phototaxis; Phototropism Pine tree chemical composition, 223-24 geologic age, 223 growth, 230 mycorrhiza, 225-26 photoperiod, 226 photosynthesis, 230 respiration in, 232 seed germination in, 232 thermoperiod, 236 translocation in, 231 Pineapple, 23-25 flowering in, 176 foliar absorption in, 18 Pinetol, 223 Plant chemotherapy, 257-73 electric charge and, 263 entry and translocation, 265-70 host resistance, 261-62 modes of action, 259-62 naturally produced antibiotics, 270-73 pathogen resistance, 261-62 toxin neutralization, 261 Plant composition, 318-23 Plasmalemma, 97 Plasma membrane, 102 Pleocidin, 269 Poison ivy, 355 Pollen, 234, 380 Pollination and growth, 379 Potassium agriculture and, 278, 293 foliar absorption of, 16, 20 mobility in plant, 297 relation to calcium and magnesium, 281 sodium as substitute for, 293 Proline, 389, 399 Proplastid, 81 Protein bulk preparation of, 36-38 hydrolysis in soil, 302 in leaf, 33-49 respiratory substrates, 114 synthesis, 132 and growth induction, 389 in virus, see Virus diseases Protochlorophyll, 39, 40 Pyrenoid, 73

R
Radioactivity, foliar, 26

Regulators, 7 Reproduction in pine trees, 230 Respiration carbon monoxide-resistant. 124-28 carbon pathways and, 369 cyanide-resistant, 124-28 cytochromes and, 119, 120, 121, 122 fruit maturation and, 134 in germination, 133 hormones and, 135 hydrogen and electron transport, 118-24 light and, 131-32 mechanisms in higher plants, 113-37 mitochondria and, 118-22, 136 nitrogen assimilation and, 133 noncytochrome pathways, 122-23 phosphorylation and, 127, 128-31 phytopathology and, 135 in pine trees, 232 potassium and, 293 in root tip, 134 spectroscopy and, 121 sulfur assimilation and, 133 "synthetic efficiency," 113 tricarboxylic acid cycle, 114-18 virus infection and, 250 Respiratory chain, 122 Rhodopsin, 79, 80 Riboflavin action with IAA, 444 phototropism and, 441 Ribonuclease infection inhibition by, 242 preparation, 46 Rice and ammonia, 307 Root elongation and calcium, 284 entry of antibiotics, 236 mycorrhiza and, 225-26 nitrogen excretion and, 307 Root tip growth of, 389 lipase in, 199 respiratory rate in, 134 Rosette, 3 Rubidium absorption, 16

Radioisotopes, 13, 22

S

Salt
absorption, 87-91
accumulation time, 92
adsorption exchange, 88-89
exchange across permeation barrier, 98

metabolism, 25-26 saturation of absorbing tissue, 91 transport into tissue, 87-109 uptake, 87 Sap composition, 321 Seed antibiotics in, 270 fat synthesis in, 209 germination, 232 lipase in, 198 Seedling anthocyanin, 224 Serology, 45-46 Short-day plants floral induction in, 149-62 Smut, 418 Sodium as potassium substitute, foliar absorption of, 16, Soil, 277 antibiotics and, 270 mycorrhiza in, 225 nitrogen in, 301-6 phosphorus in, 288 potassium in, 294-95 sulfur and, 285, 286 Soybean absorption rate, 18 Species difference in phosphorus need, 291 Spectroscopy and respiration, 121 Spirilloxanthin, 61 Sporangiophores, 452 Spore germination and auxin, 431 Spraying, see Mineral nutrition, foliar absorption Sprays, 295 see also Plant chemothera-Squash absorption rate, 18 Starch conversion, 329 synthesis, 73 Stem entry of antibiotics, 266 entry of chemotherapeutants, 268 growth abnormalities, 412 Stomata and mineral nutrition, 14 Streptomycin in plant pathology, 258, 263, 264, 265 Stroma, 73 Strontium absorption, 16, 20 Suberin, 14 Subtilin, 263 Succulence and virus infection, 245 Sucrose synthesis, 358 Sugar hormones and, 262 mineral absorption and, 15 Sugar beet and ammonta, 305

Sugar cane foliar feeding and, 18, 23 nitrogen and, 15 Sulfate from rain water, 285 Sulfonamide, 267 Sulfur amino acids and, 322 assimilation and respiration, 133 deficiency in soil, 285 foliar absorption of, 15-16, 20, 22 mobility in plant, 295, 296 nitrate and, 306 in soil, 286 Sunflower seed composition, 210 Surfactants, 13 Sweet potato flowering, 175-76 Symplast, 108 Synergids, 379 Syringin, 188

т

Tannins, 36 Tartaric acid metabolism, 367 Tea and ammonia, 304 Temperature denitrification and, 310 fat composition and, 210 floral induction, 152 nitrate reduction and, 312 uptake of sprays and, 26 virus infection and, 245, 247-48 Terminal buds, 228 Thermoperiod and seedlings, 226 Thiaminase preparation, 46-47 Thiouracil, 249, 258 Thunberg-Wieland cycle, 361 Tip, see Phototropism Tissue culture in lignin study, 190 Tobacco, 9 foliar absorption in, 18 nitrogen and, 15 Tobacco mosaic, 239-50, 258 see also Plant chemothera-Tomato flowering in, 176 foliar absorption rate, 18 Topotactic movement, 453 Toxicity of nitrogenous compounds, 318 Toxin neutralization, 261-62 Tracers evidence in EMP pathway, 330 in lignin study, 188-89

Transamination, 316-17 Translocation and floral induction, 157-58 in pine trees, 231 Transport, 20-21 of salt into tissue, 87-109 Trees pine, see Pine tree see also Lignins Trehalose, 358 Tricarboxylic acid cycle, 114-18, 360-61, 366 Tropism, 7 Tumors, 380, 388-89, 412 Tung, 1 Turnip yellow mosaic, 241,

1

Turpentine, 224

Ultraviolet radiation and virus, 240, 243
Uncoupling, 61
Uptake in chemotherapy, 265 steady-state, 88
Urea metabolism, 21-22
Urea nitrogen absorption, 15
Urease, 21

V

Vegetable crops and sprays, 24-25 Vernalization, 172-74 Viomycin, 263 Virus disease chemotherapy and, 258 fragment activity, 239-42 physiology of, 239-53 Viruses amino acids and, 322 from leaf, 42-44 neoplastic growth and, 380 ultraviolet radiation and, 240, 243 Virus infection magnesium deficiency and, 245 host metabolism and, 244-53 photosynthesis and, 250-51 rocess, 242-44 respiration and, 250 temperature and, 245, 247-48 thiouracil and, 249 Volvocales, 456

w

Water, phosphorus in, 288 Water free space, salt entry, 88 Wheat amino acid in, 420 ammonia and, 305 Wilt, see Plant chemotherapy Wood, see Lignins

Xylem, movement of antibiotics in, 267

Y

Yellows, 3

Zinc deficiency in fruit trees, 3-7 foliar absorption of, 16-17, 20 Zygote, 379

Z